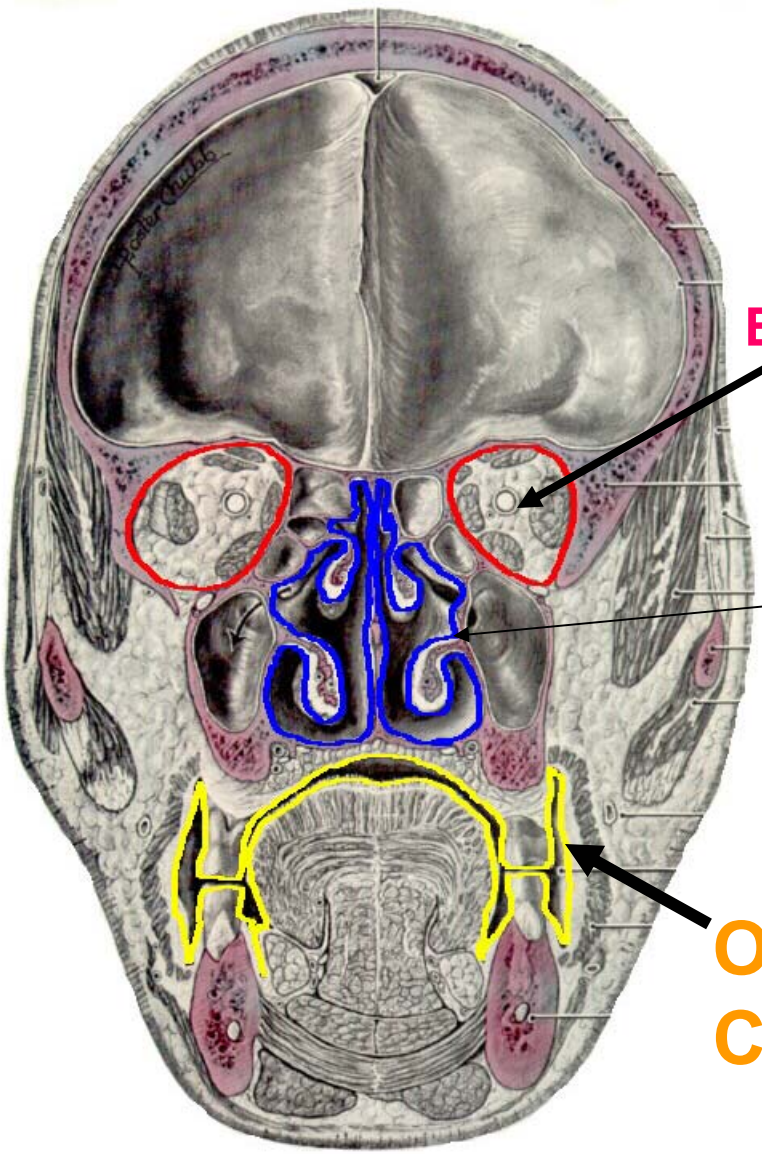
ORAL CAVITY



WHY IS HEAD & NECK COMPLICATED?

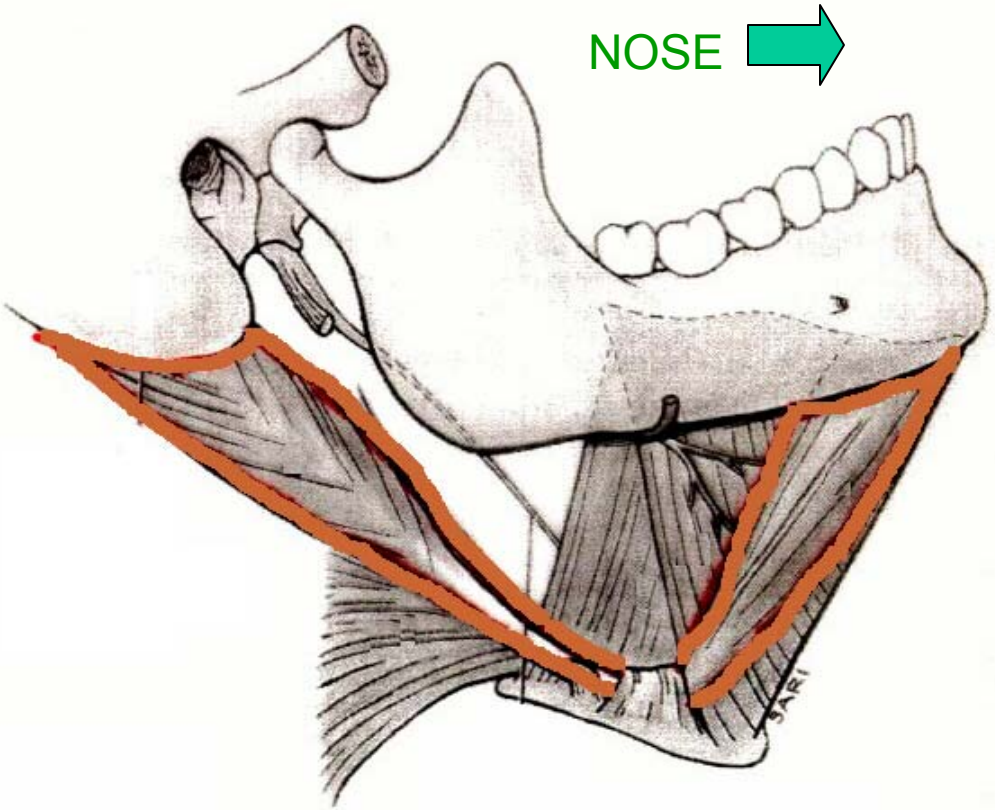
SPECIAL SENSES (SSA - VISION, AUDITORY SVA - OLFACTION) SURROUND ORAL CAVITY; YOU SENSE WHAT YOU EAT (AND AVOID BEING EATEN)

OUTLINE: ORAL CAVITY

I. SUBMANDIBULAR REGION
II. TONGUE
III. NERVES, ARTERIES, SALIVARY GLANDS

I. SUBMANDIBULAR REGION

= AREA BETWEEN MANDIBLE & HYOID BONE

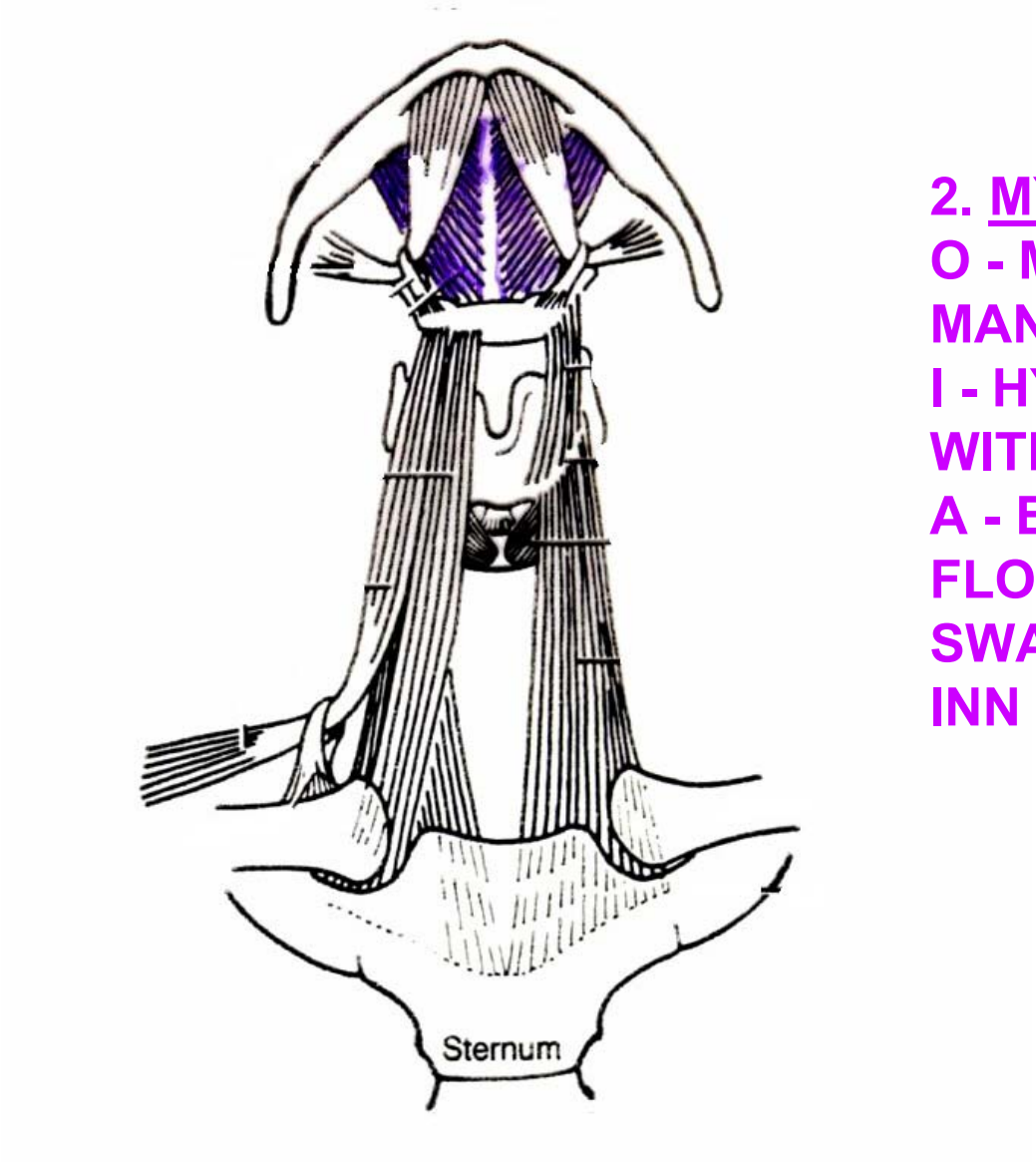


OPENS MOUTH

REVIEW MUSCLES

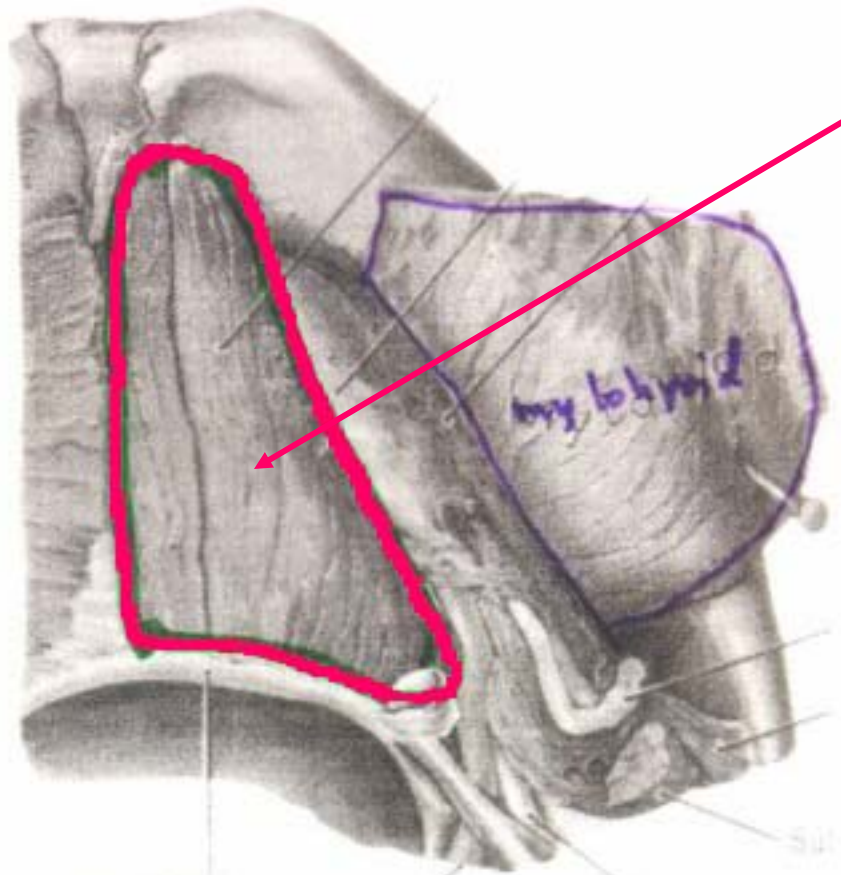
1. <u>DIGASTRIC</u>-
O - POST. BELLY- TEMPORAL BONE- MASTOID NOTCH; ANT. BELLY- INNER SIDE MANDIBLE;
I - INTERMEDIATE TENDON- HYOID;
ACT - ELEVATE HYOID & DEPRESS MANDIBLE
INN - V3, VII

SUBMANDIBULAR REGION



2. MYLOHYOID-
O - MYLOHYOID LINE OF MANDIBLE;
I - HYOID & MIDLINE RAPHE WITH OPPOSITE SIDE;
A - ELEVATE HYOID, RAISES FLOOR OF MOUTH IN SWALLOWING;
INN - V3

SUBMANDIBULAR REGION



3. <u>GENIOHYOID</u> -
O - inner side of mandible above mylohyoid
A - Elevates hyoid and draws forward
Inn - C1 branch hitch-hiking with Hypoglossal nerve (CN XII)

INN - C1 VIA BRANCH HITCHHIKING WITH XII

SUBMANDIBULAR REGION

MUSCLES VIEWED AFTER BISECTION OF HEAD

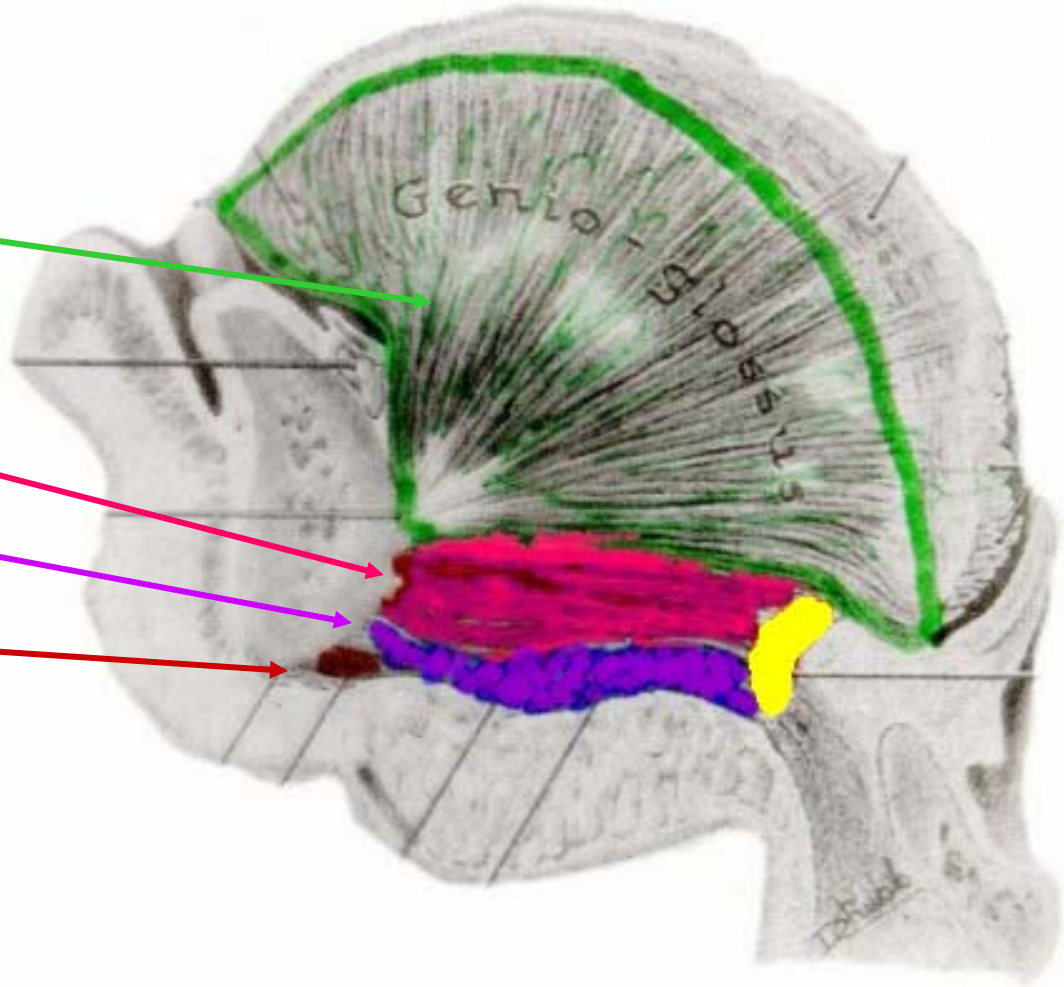
NOSE

GENIOGLOSSUS
- mandible-tongue

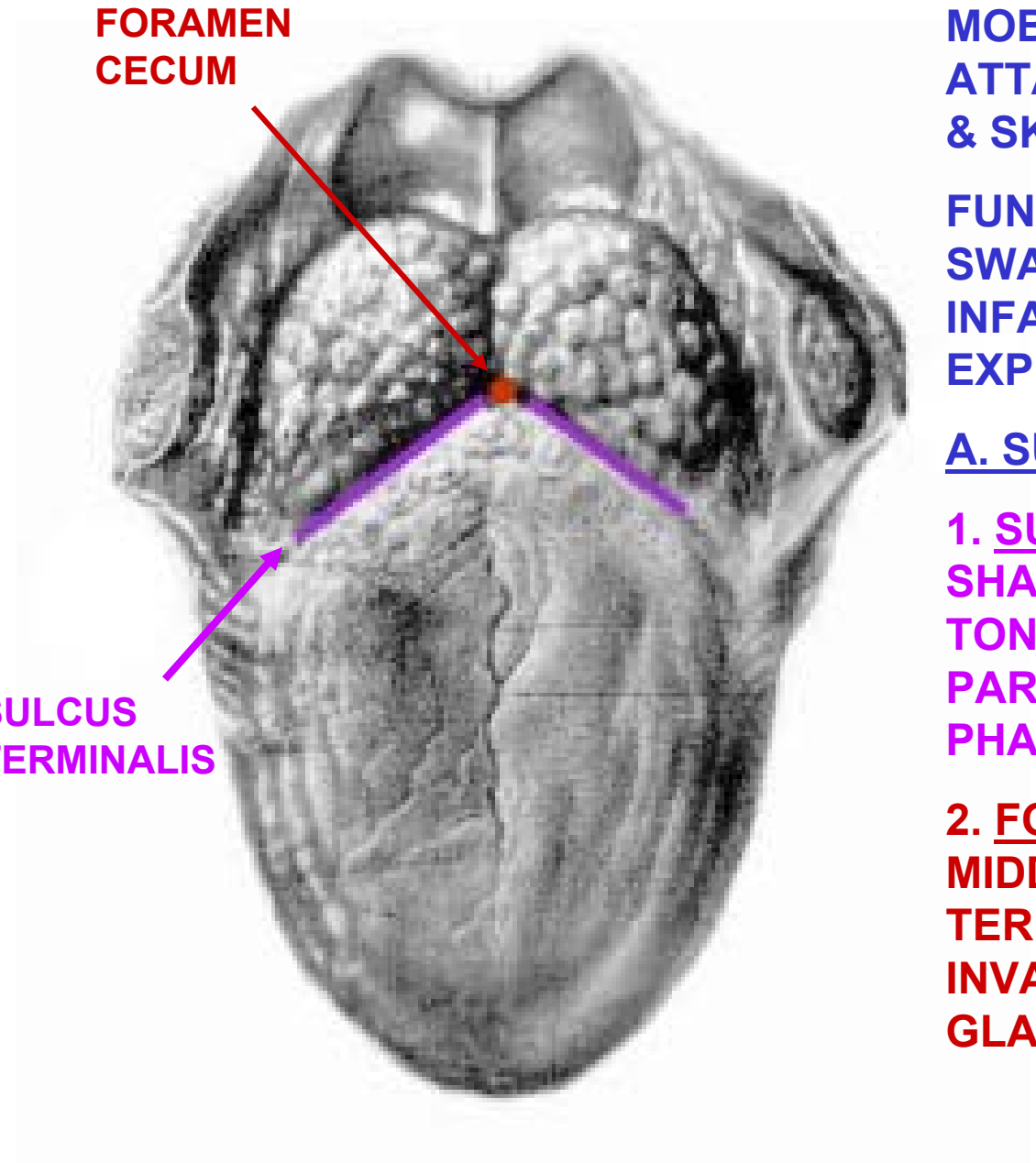
GENIOHYOID
- mandible-hyoid

MYLOHYOID
- cut on end

DIGASTRIC



II. TONGUE



MOBILE MUSCULAR ORGAN ATTACHED TO HYOID, MANDIBLE & SKULL BY MUSCLES

FUNCTIONS: SPEECH, SWALLOWING, TASTE & INFANTILE EMOTIONAL EXPRESSIONS

A. SUPERFICIAL STRUCTURES

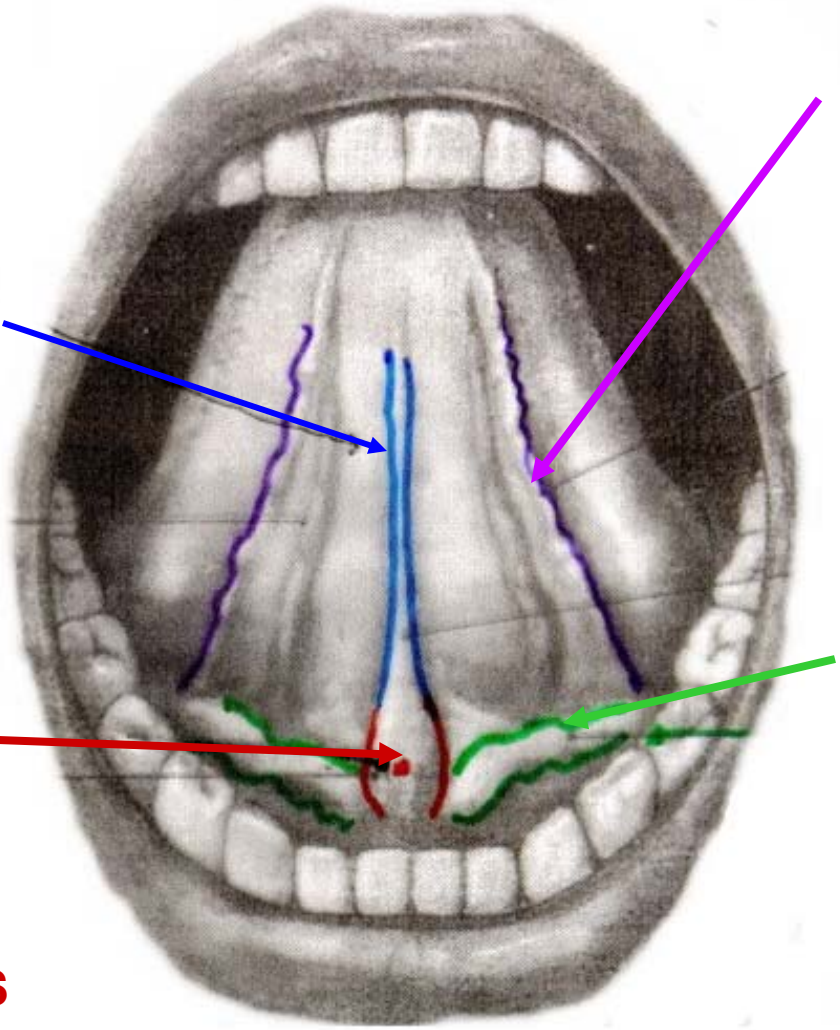
1. SULCUS TERMINALIS - V-SHAPE GROOVE DIVIDES TONGUE INTO: ANT. 2/3- ORAL PART - GSA; POST 1/3 - PHARYNGEAL PART - GVA

2. FORAMEN CAECUM - PIT IN MIDDLE OF SULCUS TERMINALIS- SITE OF INVAGINATION OF THYROID GLAND

FOLDS, LANDMARKS BENEATH TONGUE

3. LINGUAL FRENULUM (L. BRIDLE) MIDLINE FOLD FROM FLOOR OF MOUTH

SUBLINGUAL PAPILLA- SWELLING AT BASE OF FRENULUM; OPENINGS SUBMANDIB. SALIV. GLANDS



4. FIMBRIATED FOLDS (PLICA FIMBRIATA) (L. FRINGE) - LATERAL TO LINGUAL FRENULUM, LOCATION OF LINGUAL VEINS

5. SUBLINGUAL FOLDS (PLICA SUBLINGUALIS) OVERLIE & HAVE OPENINGS FOR SUBLINGUAL SALIV GLANDS

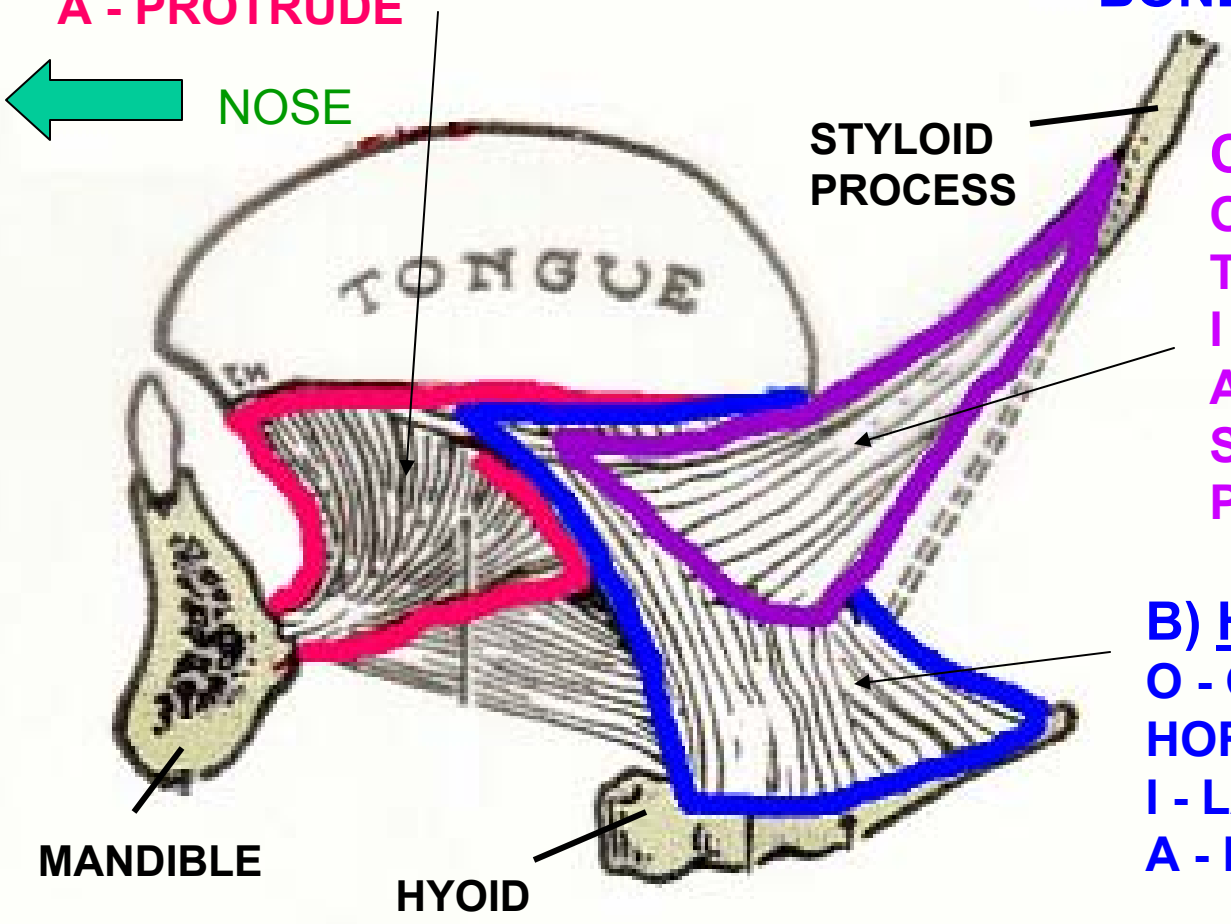
B. MUSCLES OF TONGUE - all innervated by XII

A) GENIOGLOSSUS

O - GENIAL TUBERCLE OF MANDIBLE

I - TONGUE TO ITS DORSAL SURFACE

A - PROTRUDE



1. EXTRINSIC MUSCLES - ATTACH TONGUE TO BONES

C) STYLOGLOSSUS -

O-STYLOID PROCESS OF TEMP. BONE

I - LAT. SIDE OF TONGUE

A - DRAWS TONGUE SUPERIORLY & POSTERIORLY

B) HYOGLOSSUS -

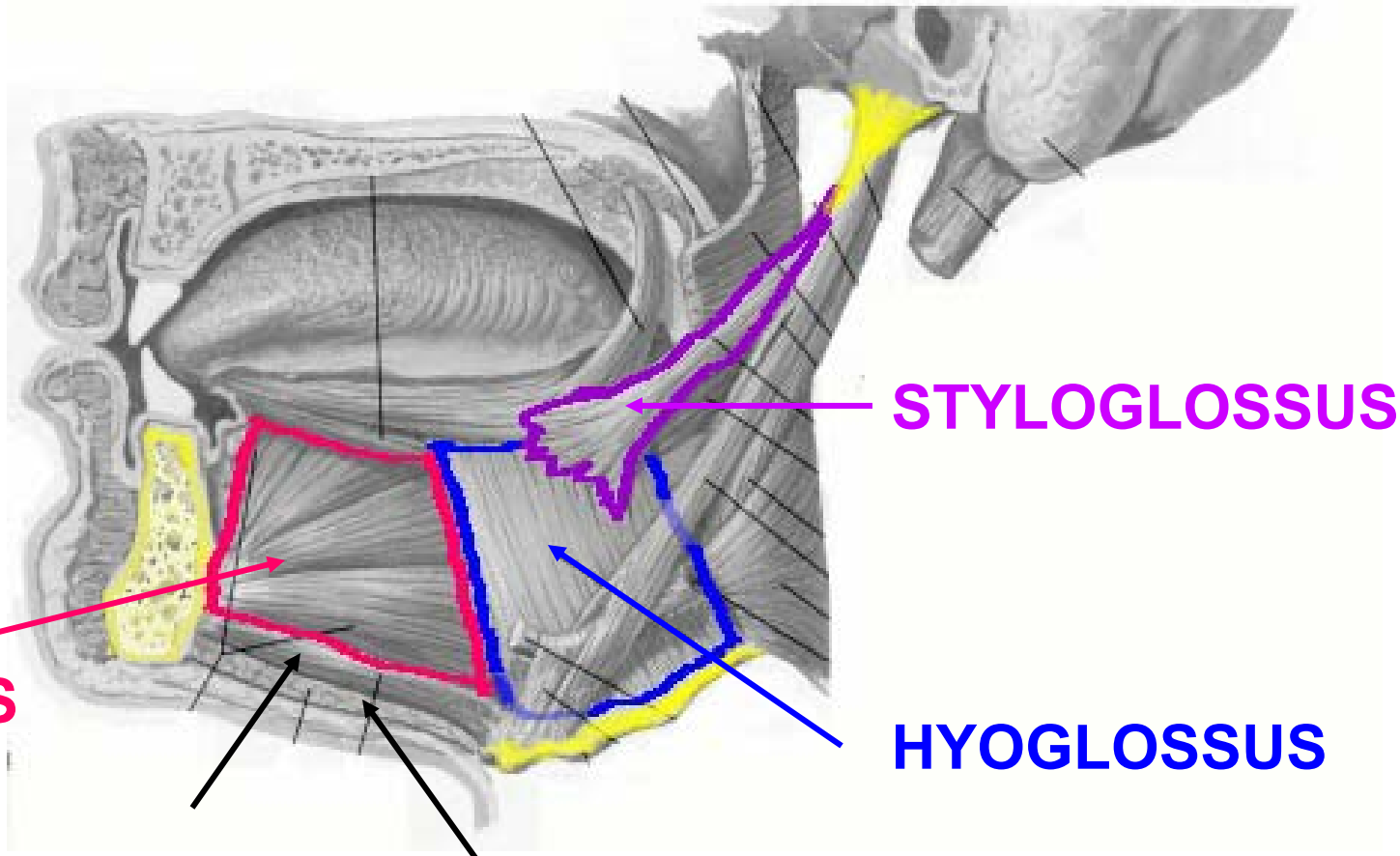
O - GREATER & LESSER HORNS OF HYOID BONE

I - LAT. SIDE OF TONGUE

A - DEPRESS

MUSCLES OF TONGUE

NOSE



STYLOGLOSSUS

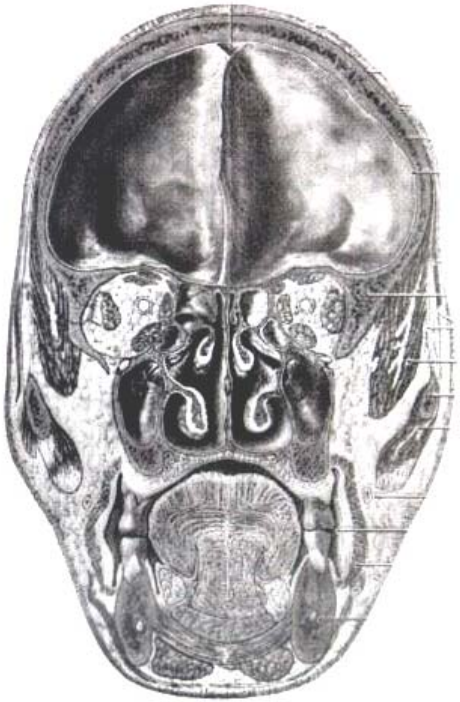
GENIO-
GLOSSUS

HYOGLOSSUS

GENIOHYOID

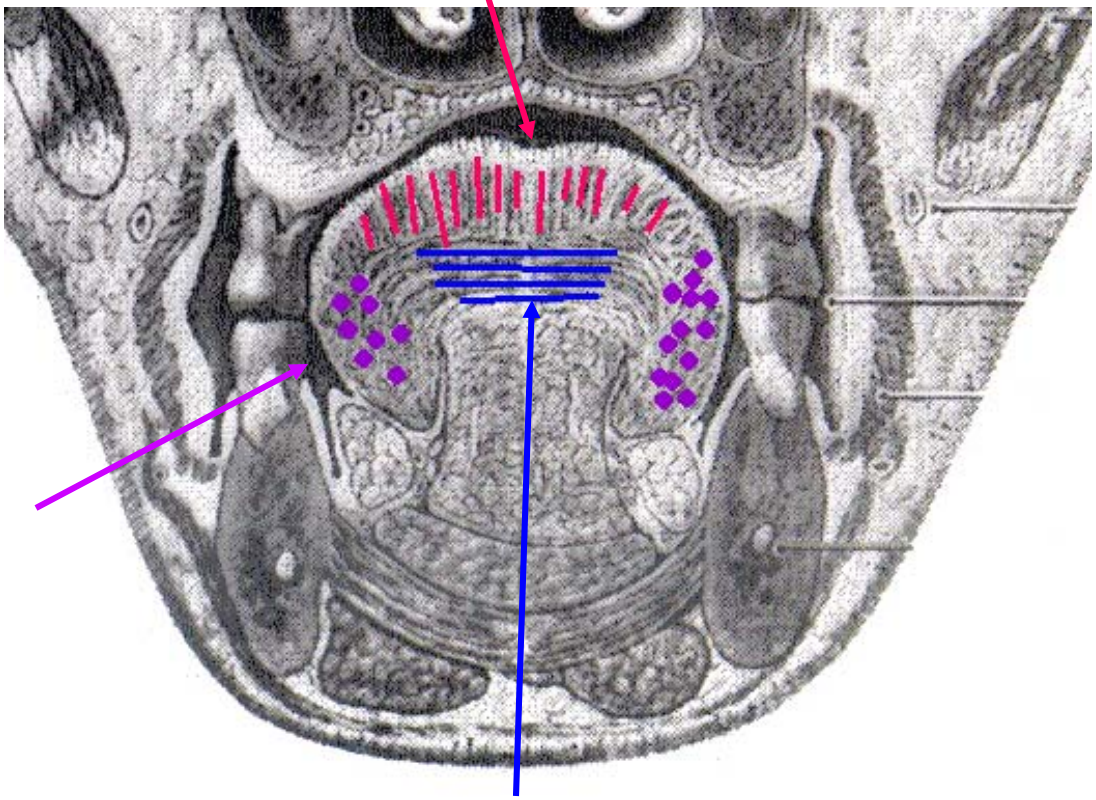
MYLOHYOID

2. INTRINSIC MUSCLES OF TONGUE



CORONAL SECTION

A) VERTICAL M. - FIBERS SUP & INF - FLATTEN & BROADEN TONGUE



C) LONGITUDINAL M. - FIBERS ANT-POST. - SHORTEN TONGUE

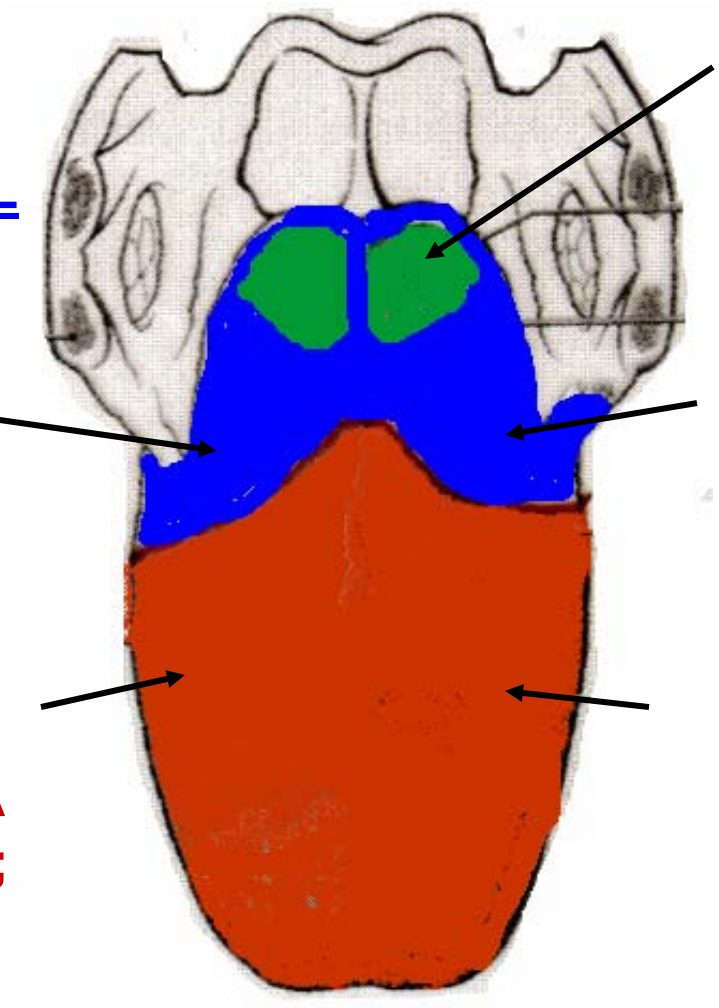
B) TRANSVERSE M. - FIBERS HORIZONTAL - NARROW TONGUE

C. INNERVATION OF TONGUE

NOTE:

PHARYNGEAL PART- POST 1/3 and ANT. TO EPIGLOTTIS- GVA TOUCH, PAIN; SVA TASTE

ORAL PART - ANT 2/3 - GSA TOUCH, PAIN; SVA TASTE



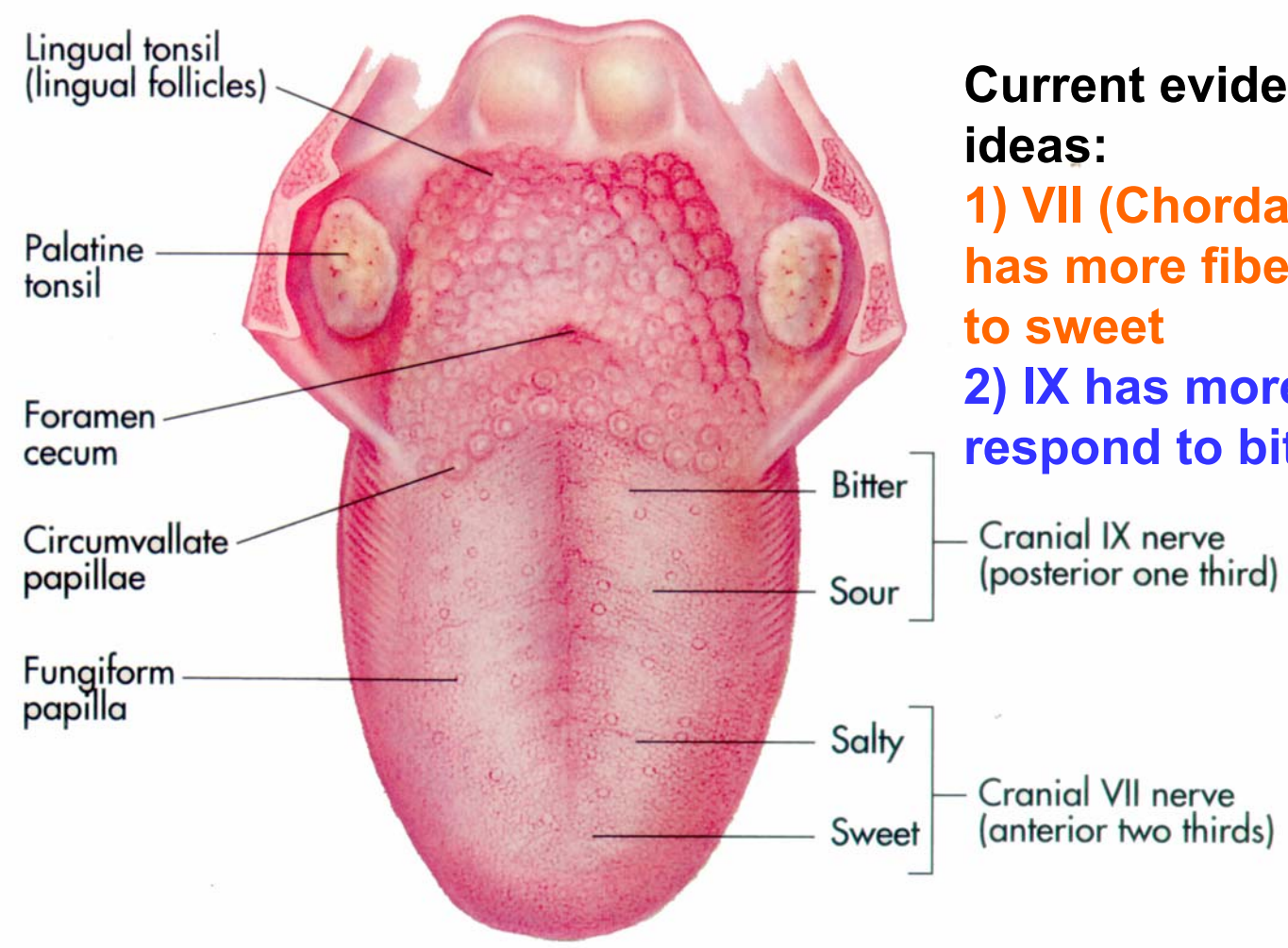
ANT. TO EPIGLOTTIS -
1) X- VAGUS
GVA TOUCH AND SVA TASTE

POST. 1/3 OF TONGUE
1) IX - GLOSSO-PHARYNGEAL GVA TOUCH AND SVA TASTE

ANT. 2/3 OF TONGUE
1) V3 - LINGUAL N. GSA TOUCH
2) VII - CHORDA TYMPANI - SVA TASTE

NOTE: ALL MUSCLES INNERVATED BY XII HYPOGLOSSAL (GSE) – PALATOGLOSSUS IS MUSCLE OF PALATE INNERVATED BY X (VAGUS)

DISTRIBUTION OF TASTE SENSATION



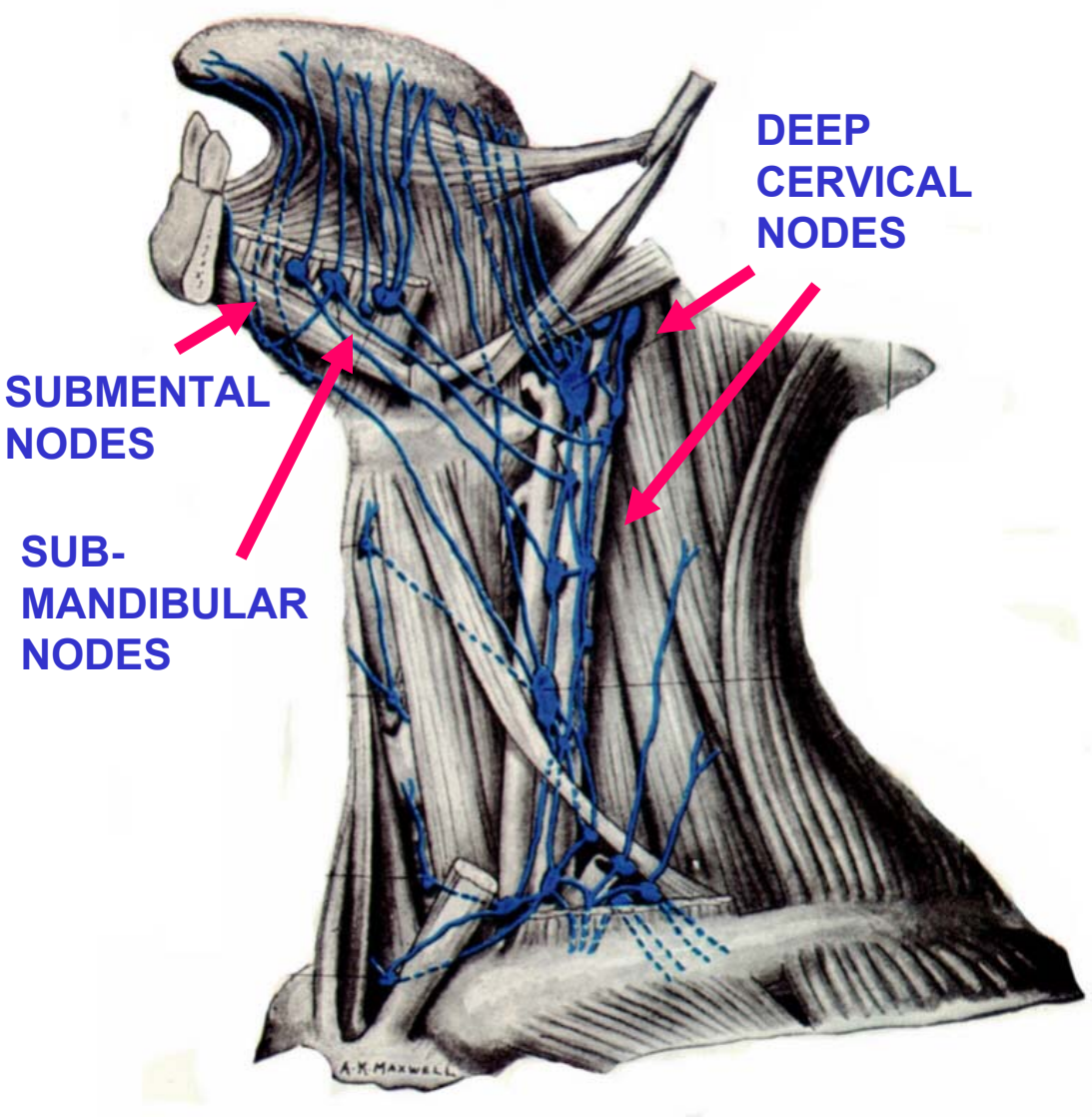
Current evidence supports ideas:

1) VII (Chorda Tympani) has more fibers that respond to sweet

2) IX has more fibers that respond to bitter

Danilova V, Hellekant G. (2003) Comparison of the responses of the chorda tympani and glossopharyngeal nerves to taste stimuli in C57BL/6J mice. BMC Neurosci. 4:4(1):5

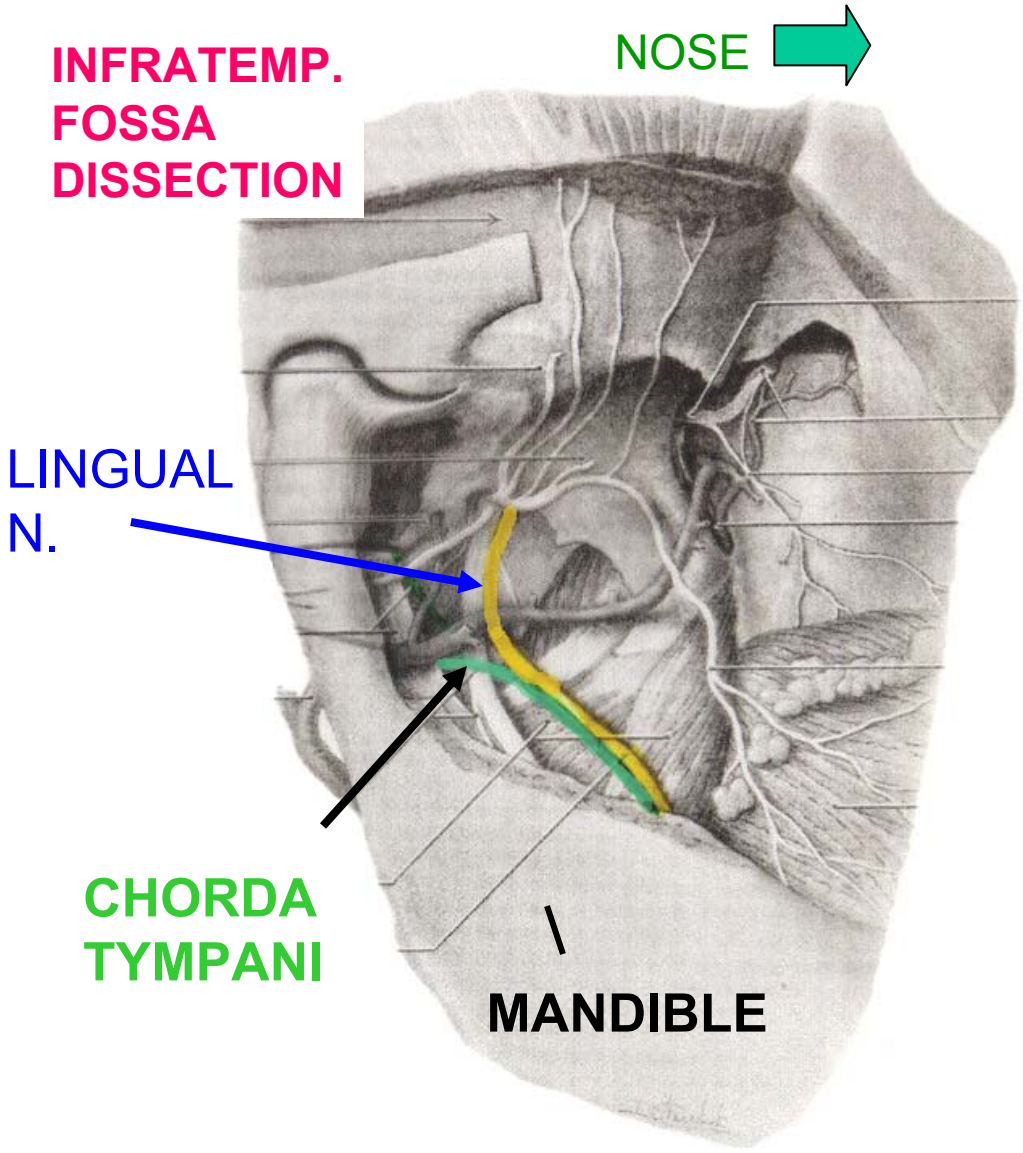
C. LYMPHATICS OF TONGUE



1. TIP OF TONGUE to SUBMENTAL NODES
2. REST OF ANTERIOR 2/3 OF TONGUE to SUBMANDIBULAR NODES AND DEEP CERVICAL LYMPH NODES
3. POSTERIOR 1/3 OF TONGUE TO DEEP CERVICAL LYMPH NODES

NOTE: LYMPH VESSELS OF TONGUE CROSS MIDLINE; LESION MAY SPREAD TO OPPOSITE SIDE

III. NERVES, ARTERIES AND SALIVARY GLANDS

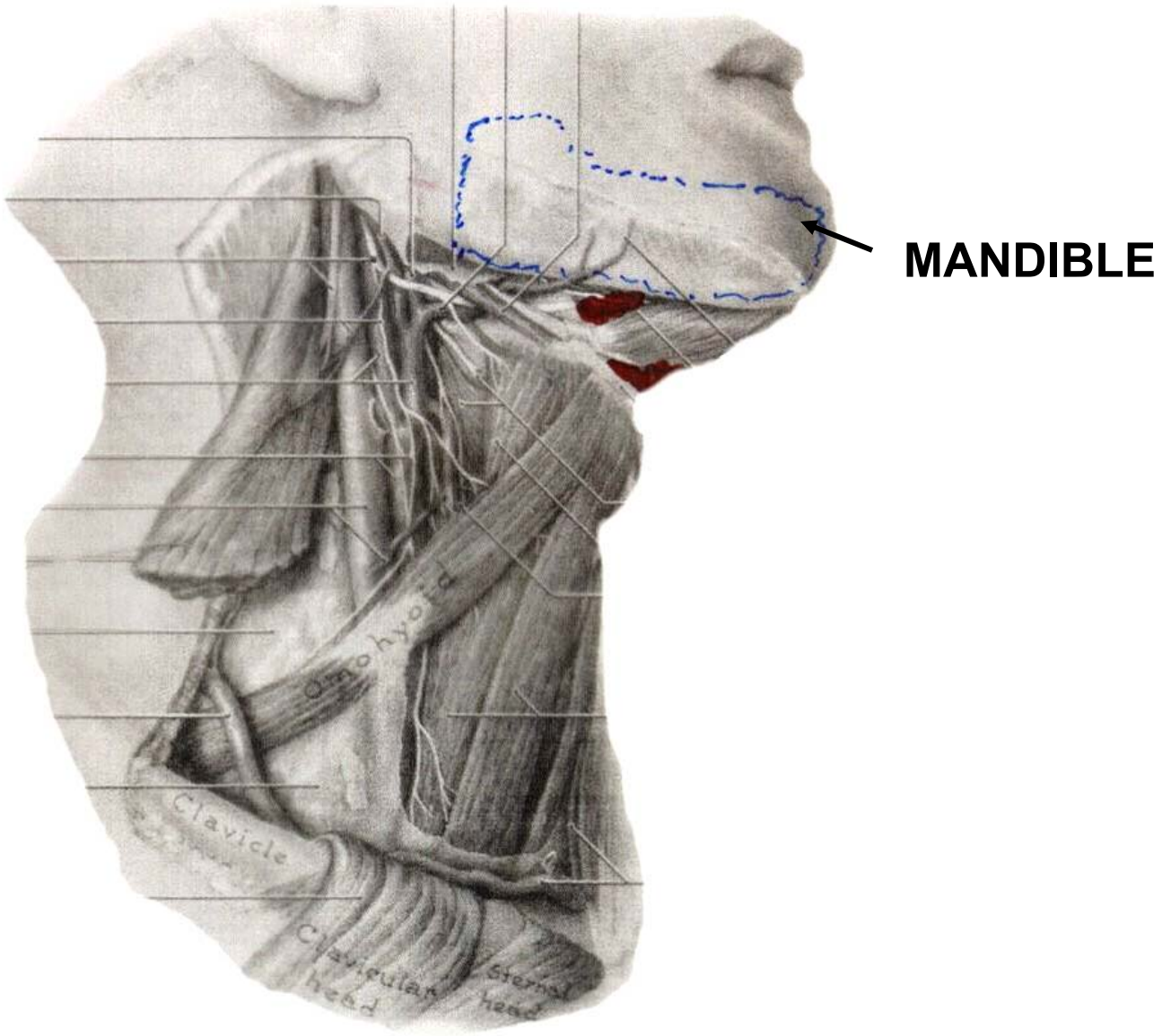


1. LINGUAL NERVE

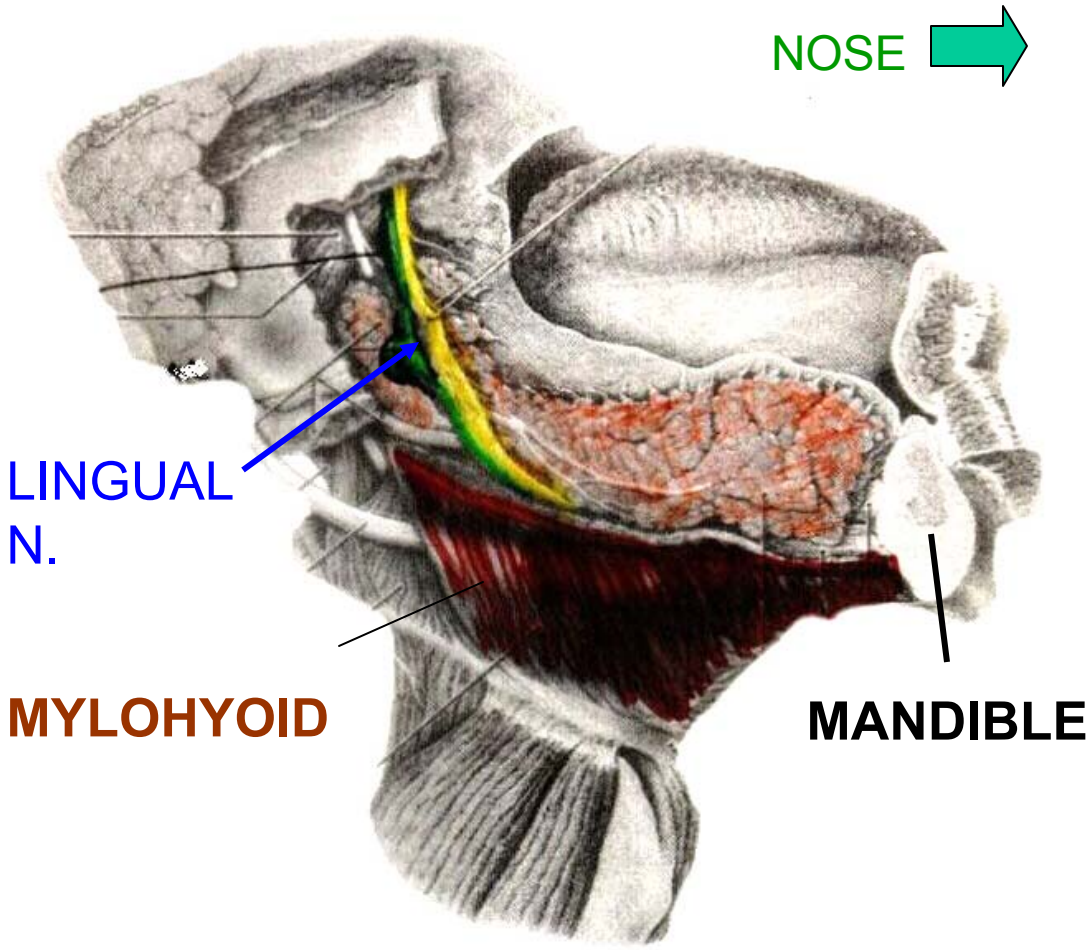
ARISES FROM POST. DIVISION OF V3 IN INFRATEMPORAL FOSSA - COURSES MEDIAL TO MANDIBLE - JOINED BY CHORDA TYMPANI

CHORDA TYMPANI- ARISES FROM VII IN FACIAL CANAL- PASSES THROUGH TYMPANIC CAVITY, MEDIAL TO MALLEUS - OUT VIA PETROTYMPANIC FISSURE - CARRIES SVA TASTE TO ANT 2/3 TONGUE, GVE PARASYMP. TO SUBMANDIBULAR GANGLION

LATERAL VIEW-CUT AWAY MANDIBLE



LINGUAL NERVE

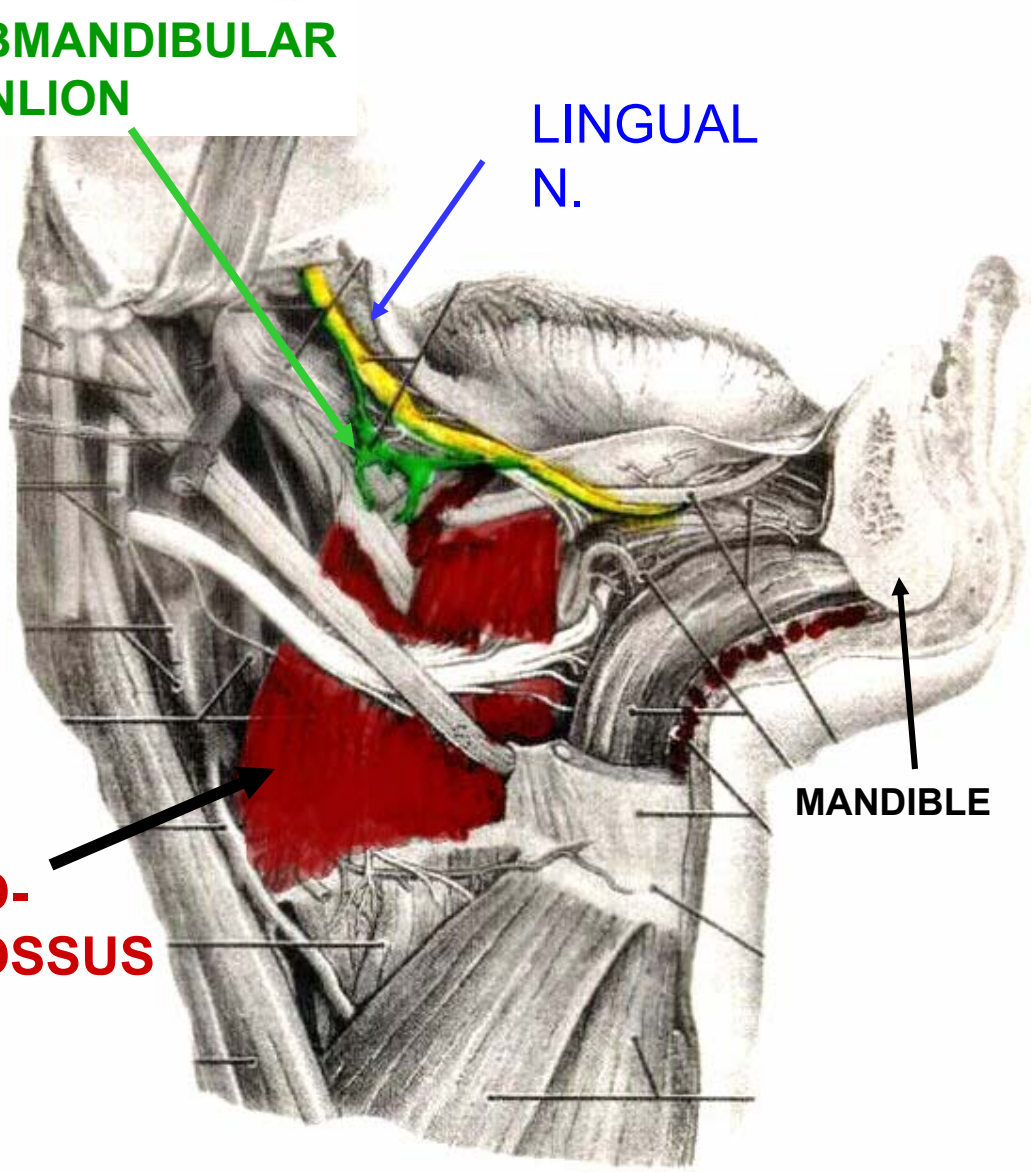


V3 LINGUAL NERVE- ENTERS FLOOR OF MOUTH (MEDIAL TO THIRD MANDIBULAR MOLAR TOOTH)

VII CHORDA TYMPANI- GVE PARASYMPATHETICS TO SUBMANDIBULAR GANGLION - SVA - TASTE TO ANT 2/3 TONGUE HITCHHIKE WITH LINGUAL N.

NOSE

LINGUAL NERVE

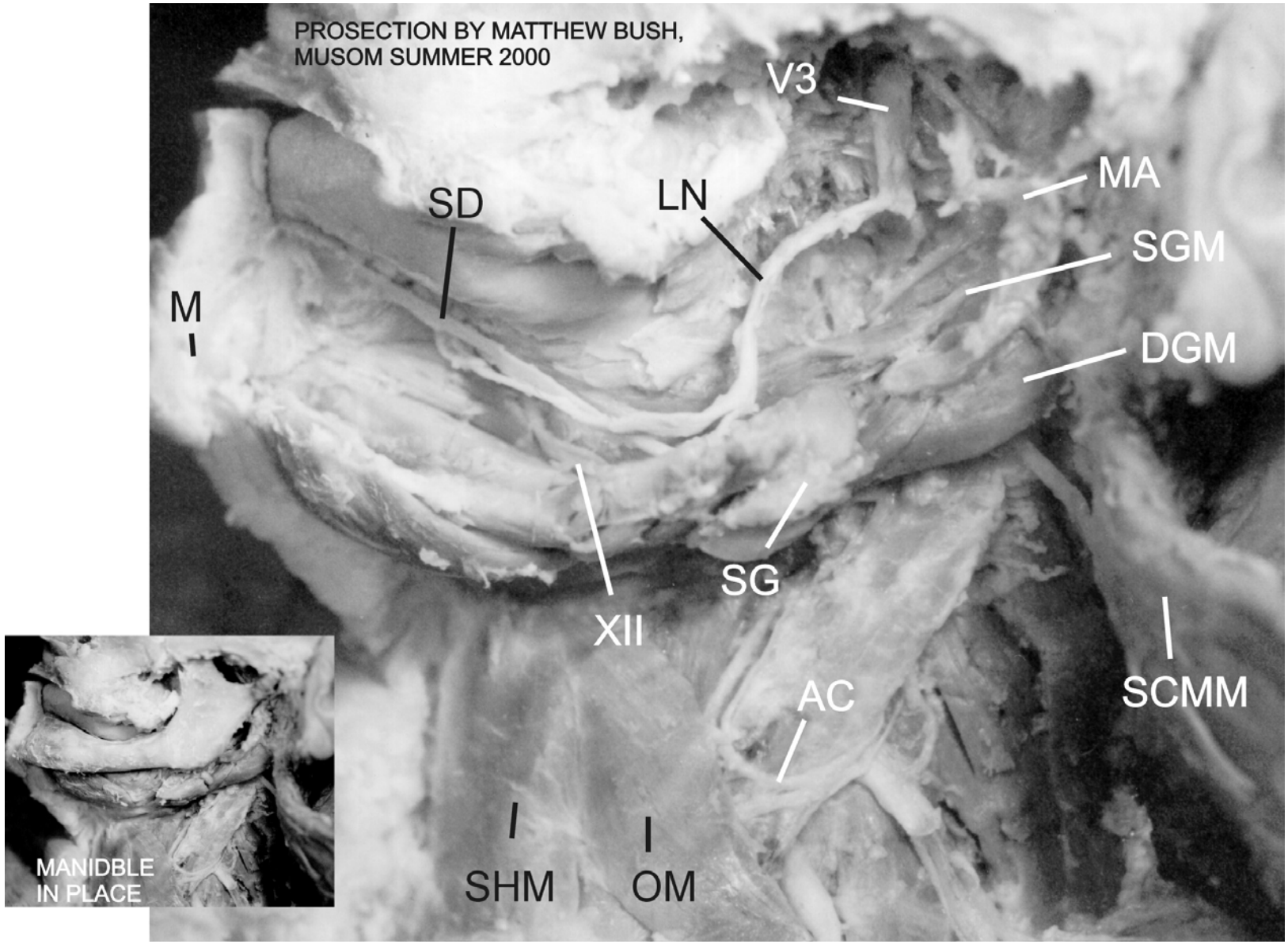


LINGUAL NERVE- COURSES UPWARD ON SURFACE OF HYO-GLOSSUS MUSCLE;

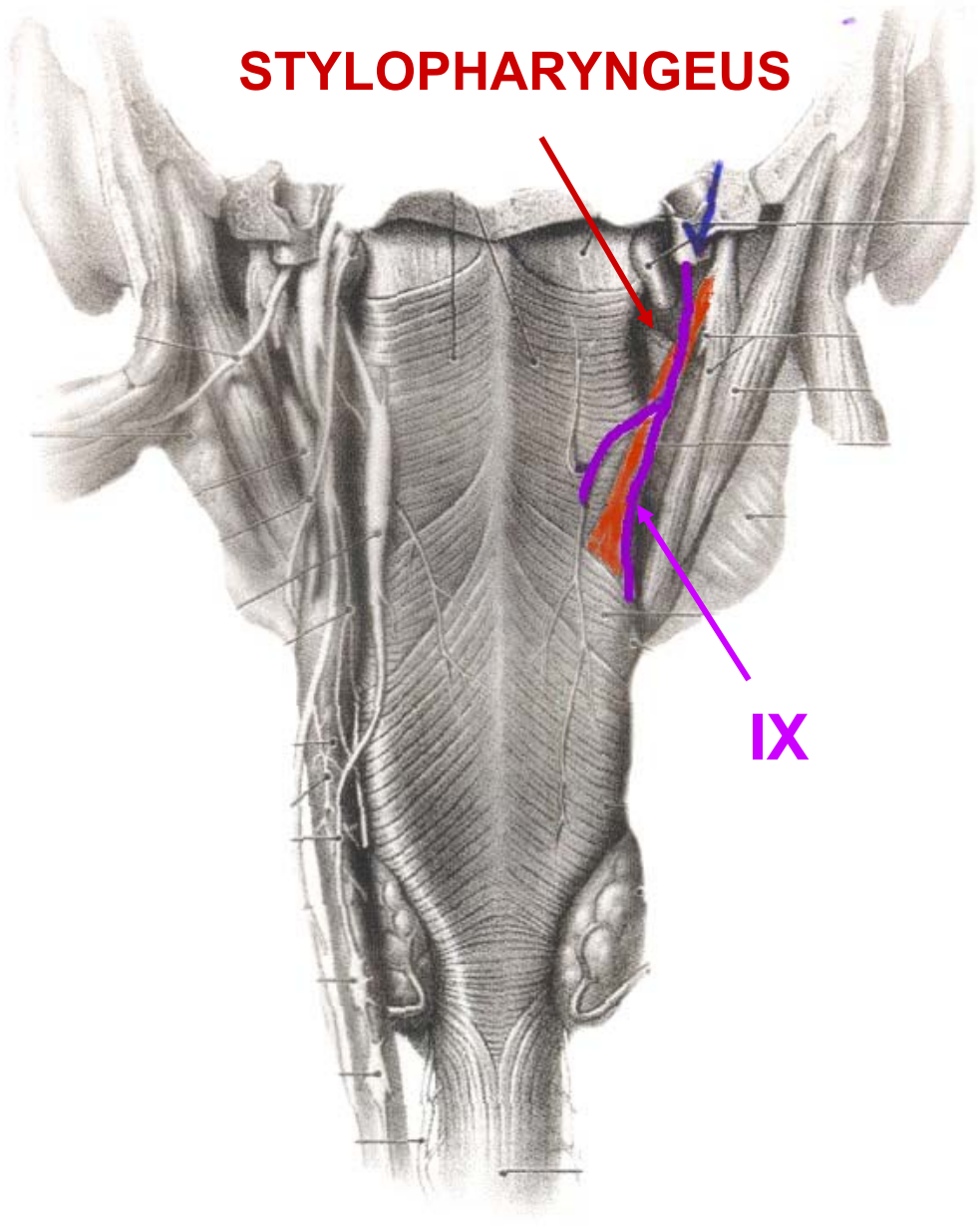
SUBMANDIBULAR GANGLION (VII) - SUSPENDED FROM LINGUAL N., INN SUBMANDIBULAR & SUBLINGUAL SALIV. GLAND

LINGUAL N. TERMINATES IN DORSUM OF TONGUE; PROVIDES GSA TOUCH, PAIN TO ANT 2/3 TONGUE; CARRIES SVA TASTE FROM VII

PROSECTION OF ORAL CAVITY

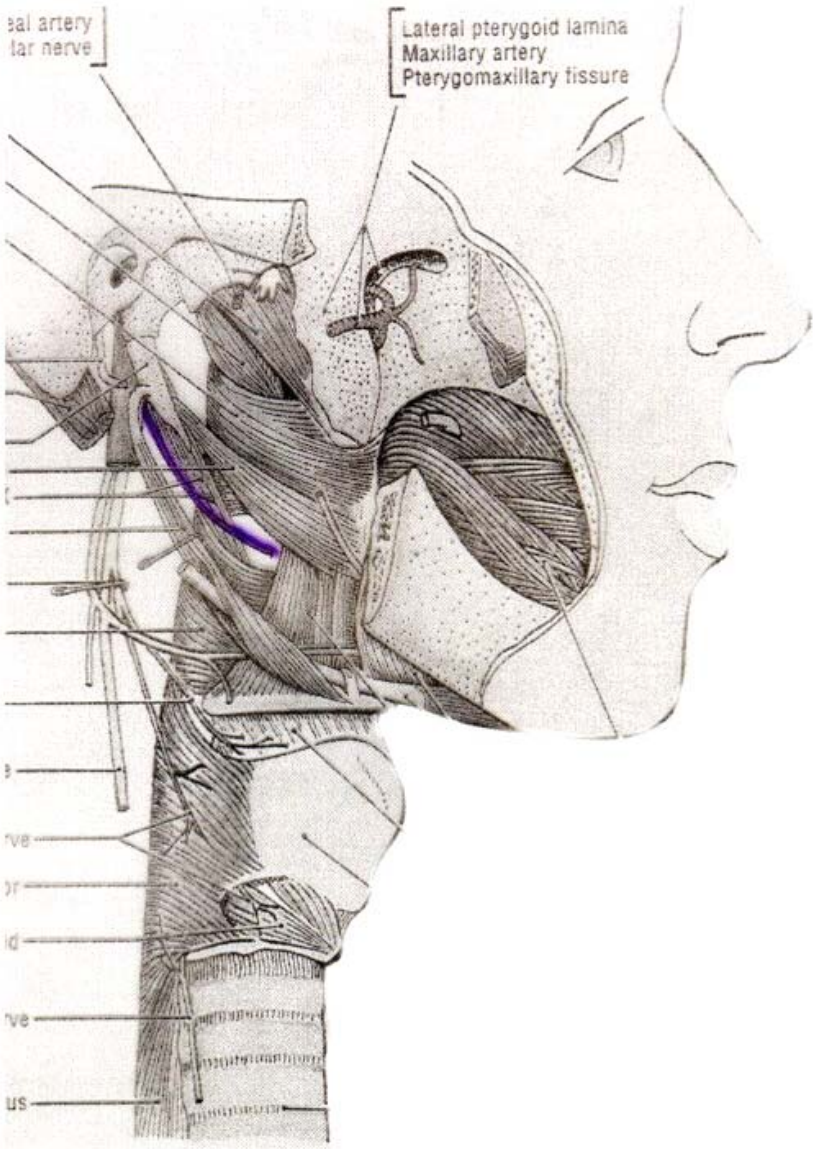


2. GLOSSOPHARYNGEAL NERVE



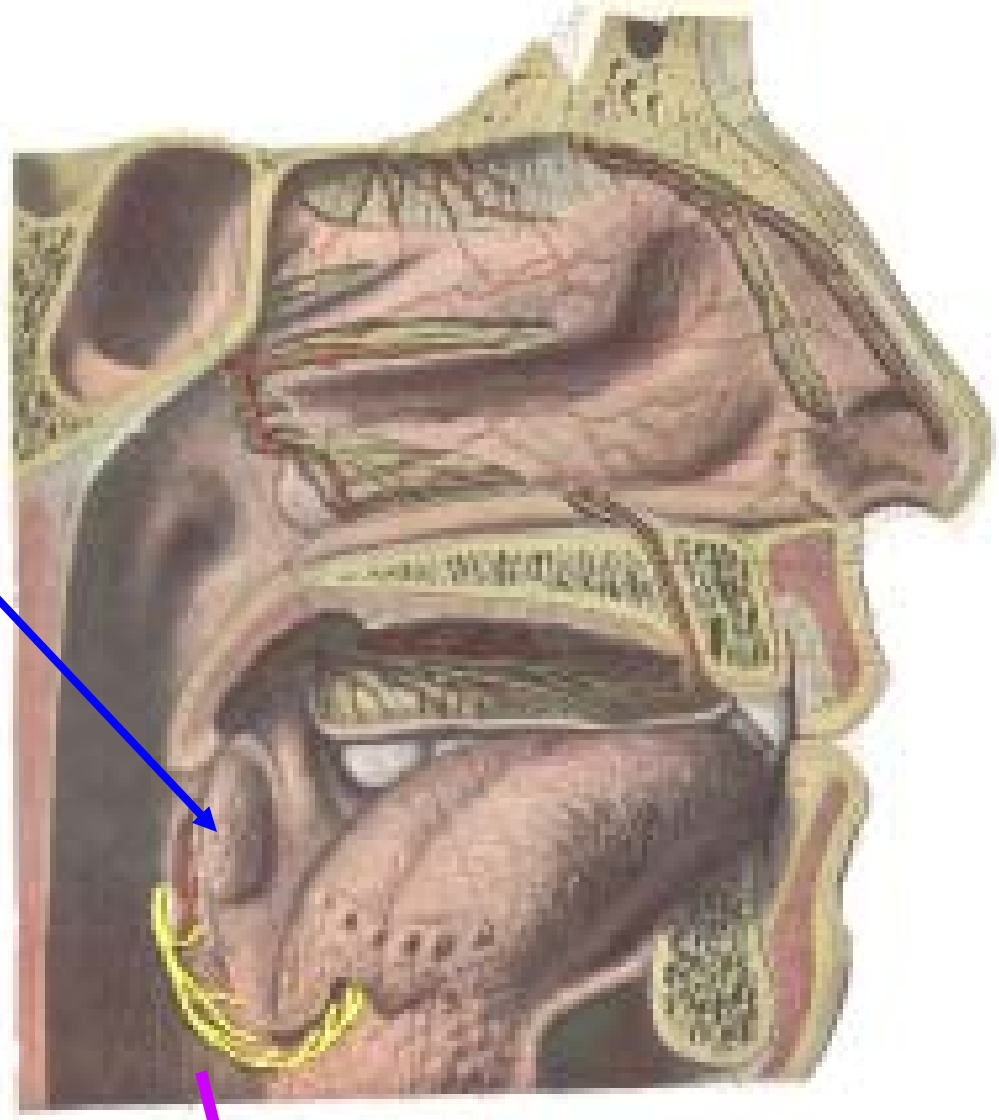
2. GLOSSO - PHARYNGEAL NERVE - IX - COMES OUT JUGULAR FORAMEN - COURSES LATERAL TO AND AROUND **STYLOPHARYNGEUS MUSCLE**

GLOSSOPHARYNGEAL NERVE



- PASSES IN GAP BETWEEN SUP & MIDDLE CONSTRICTIONS

GLOSSOPHARYNGEAL NERVE



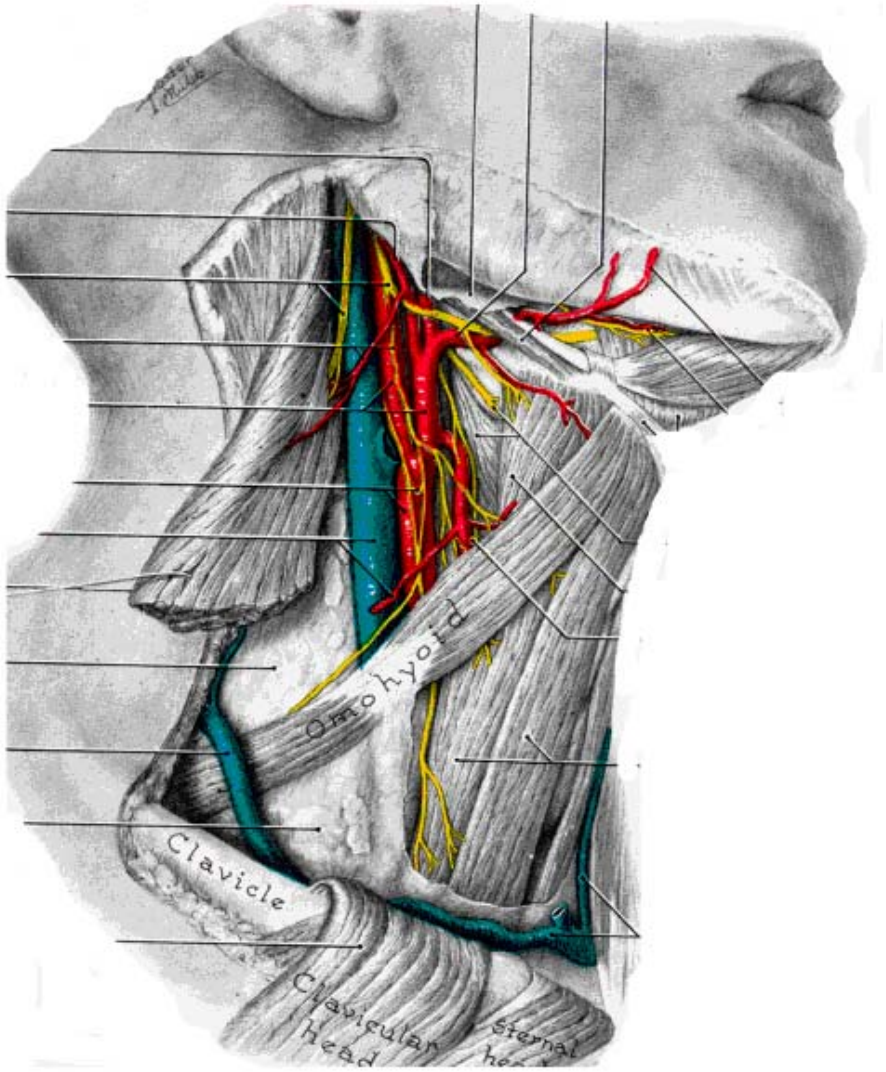
PALATINE TONSIL

IX

PASSES DEEP TO PALATINE TONSIL; ENTERS POST TONGUE

GVA - GENERAL SENSATION + SVA - TASTE TO POST 1/3 OF TONGUE

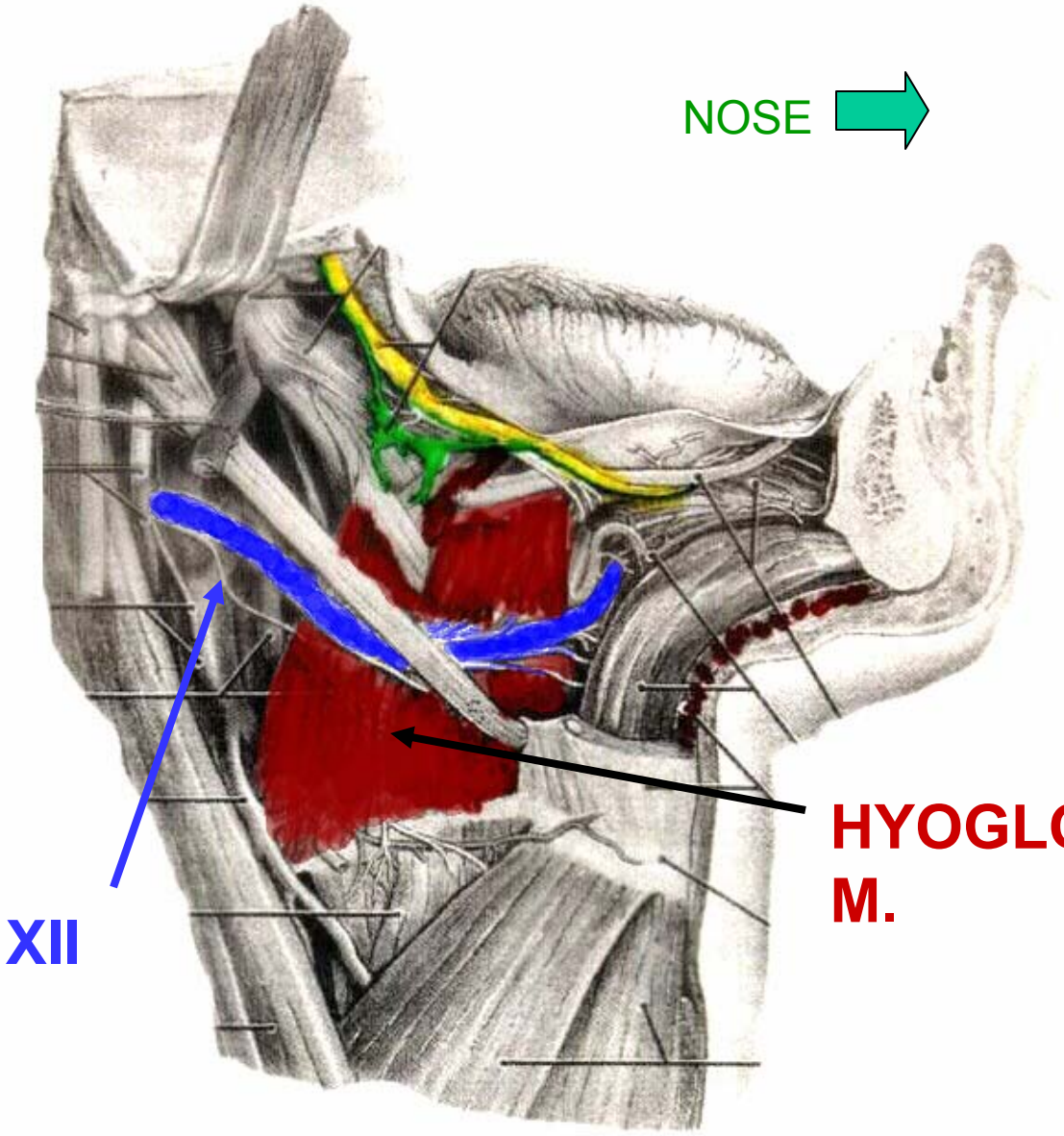
3. HYPOGLOSSAL NERVE



OUT HYPOGLOSSAL CANAL; PASSES BETWEEN INT JUGULAR VEIN AND CAROTID ARTERIES; RECEIVES C1 FIBERS (ANSA CERVICALIS) TO THYROHYOID & GENIOHYOID

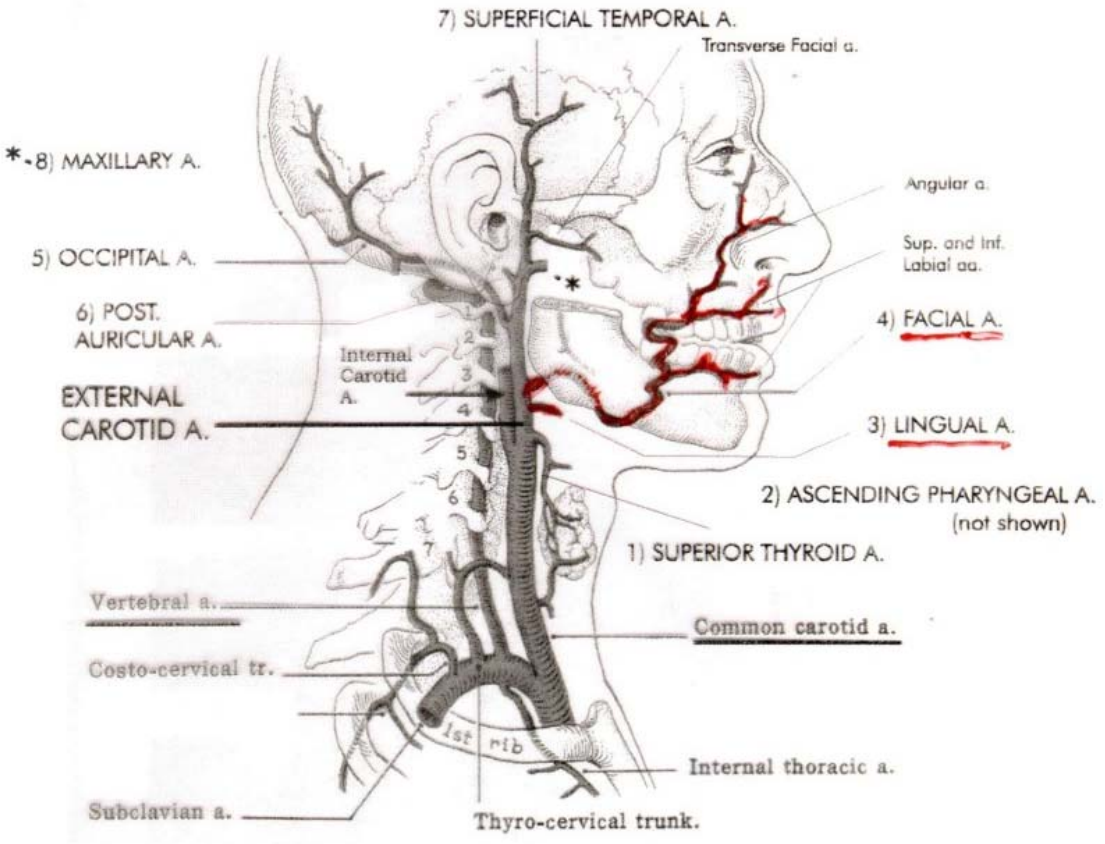
HYPOGLOSSAL NERVE

COURSES ON SURFACE OF HYOGLOSSUS MUSCLE; ENTERS TONGUE (DEEP); INNERVATES GSE->ALL MUSCLES OF TONGUE



OVERVIEW OF BLOOD SUPPLY TO HEAD

(EXCLUDING BRANCHES OF INTERNAL CAROTID A.)



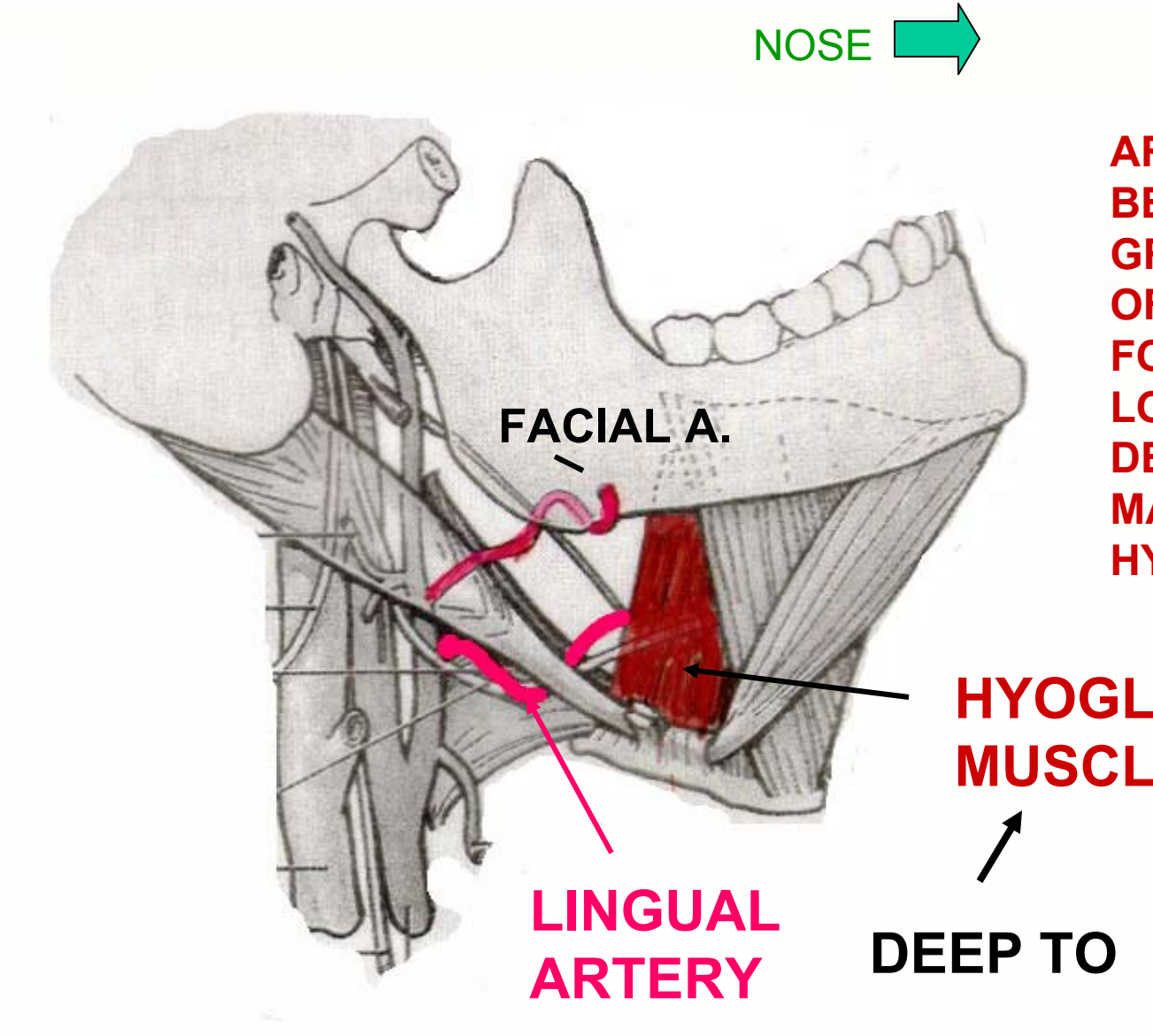
EXTERNAL CAROTID ARTERY

1) Superior Thyroid a.
2) Ascending Pharyngeal a.
3) Lingual a.
4) Facial a.
5) Occipital a.
6) Post. Auricular a.
7) Superficial Temporal a.
8) Maxillary a.

SUBCLAVIAN ARTERY

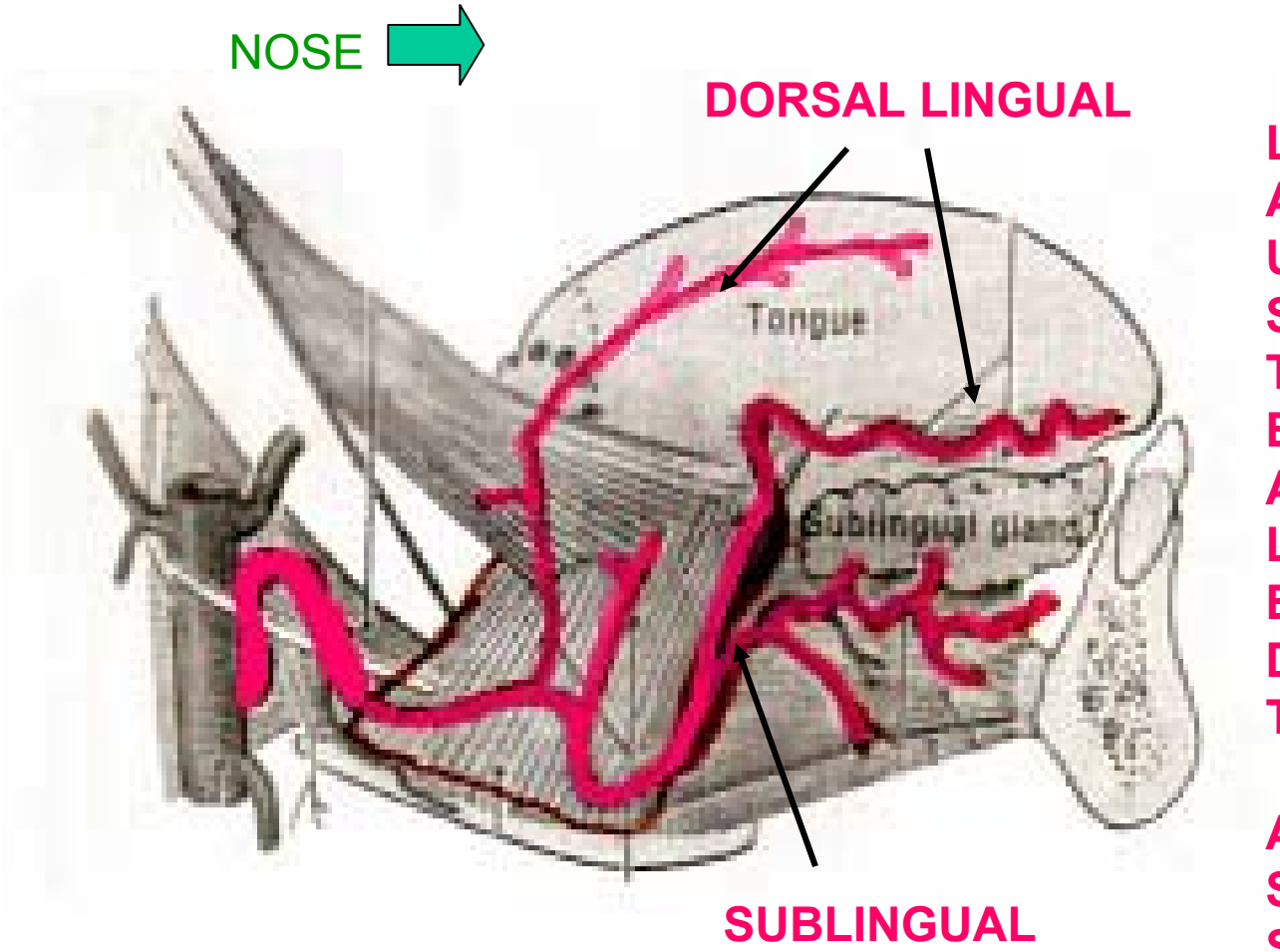
Vertebral a.
Internal Thoracic a.
Thyrocervical trunk
Costocervical trunk

1. LINGUAL ARTERY



ARISES JUST BELOW TIP OF GREATER HORN OF HYOID – FORMS UPWARD LOOP PASSING DEEP TO POST MARGIN OF HYOGLOSSUS

LINGUAL ARTERY



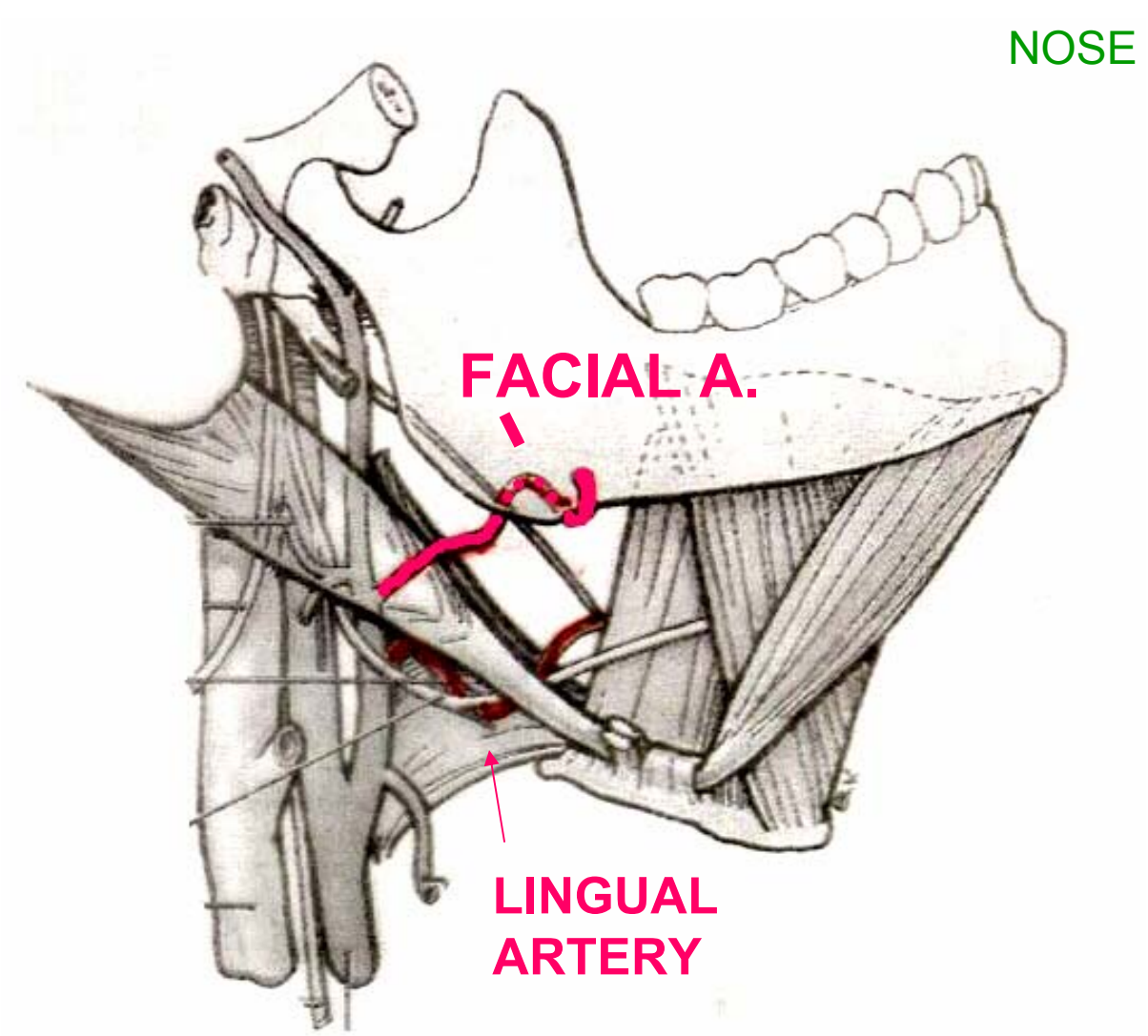
LINGUAL ARTERY- TURNS UPWARD TO SUPPLY TONGUE

BRANCHES

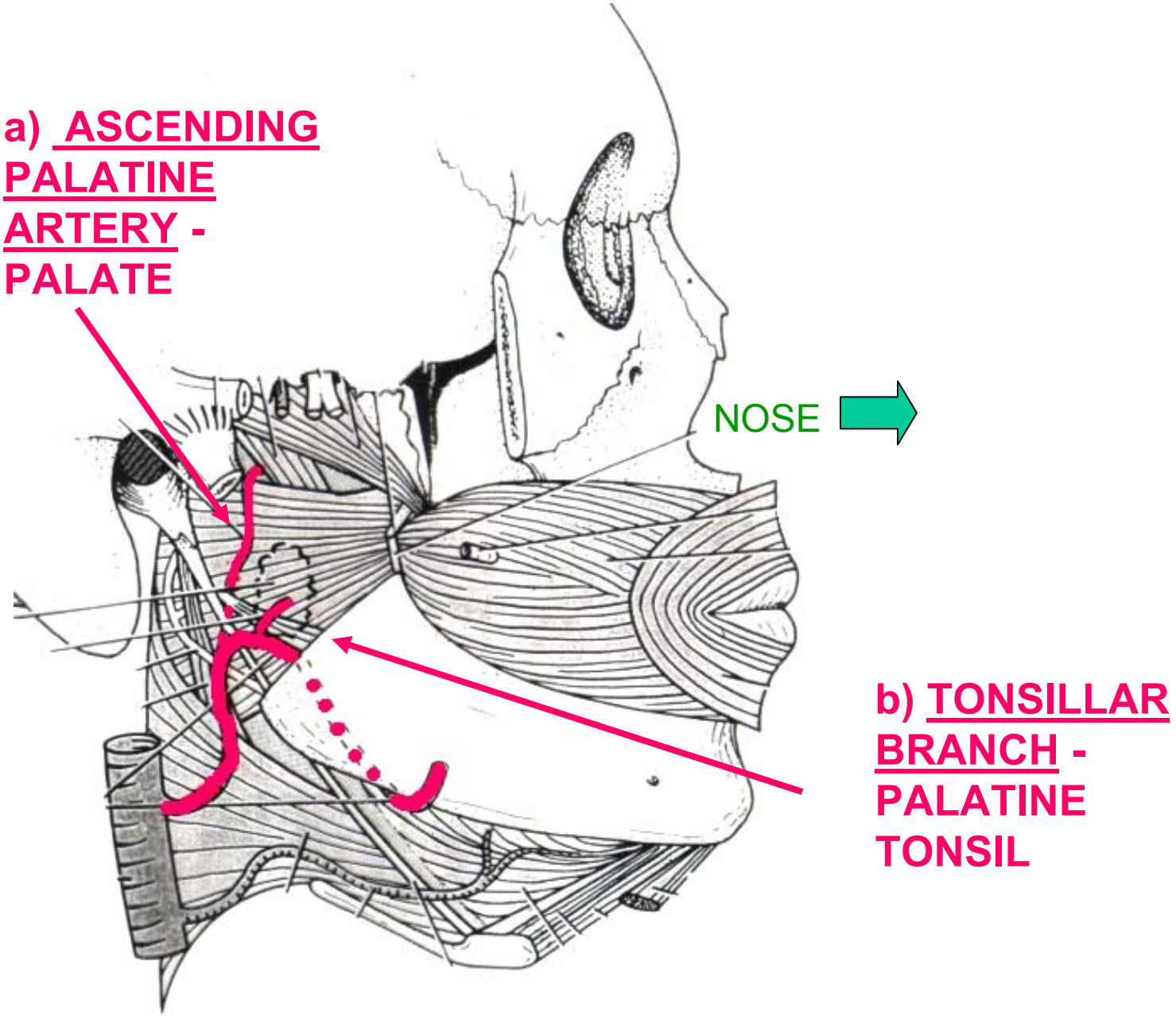
A) DORSAL LINGUAL BRANCHES- TO DORSUM OF TONGUE

B) SUBLINGUAL ARTERY-> TO SUBLINGUAL SALIVARY GLAND

2. FACIAL ARTERY- ARISES SUPERIOR TO LINGUAL ARTERY

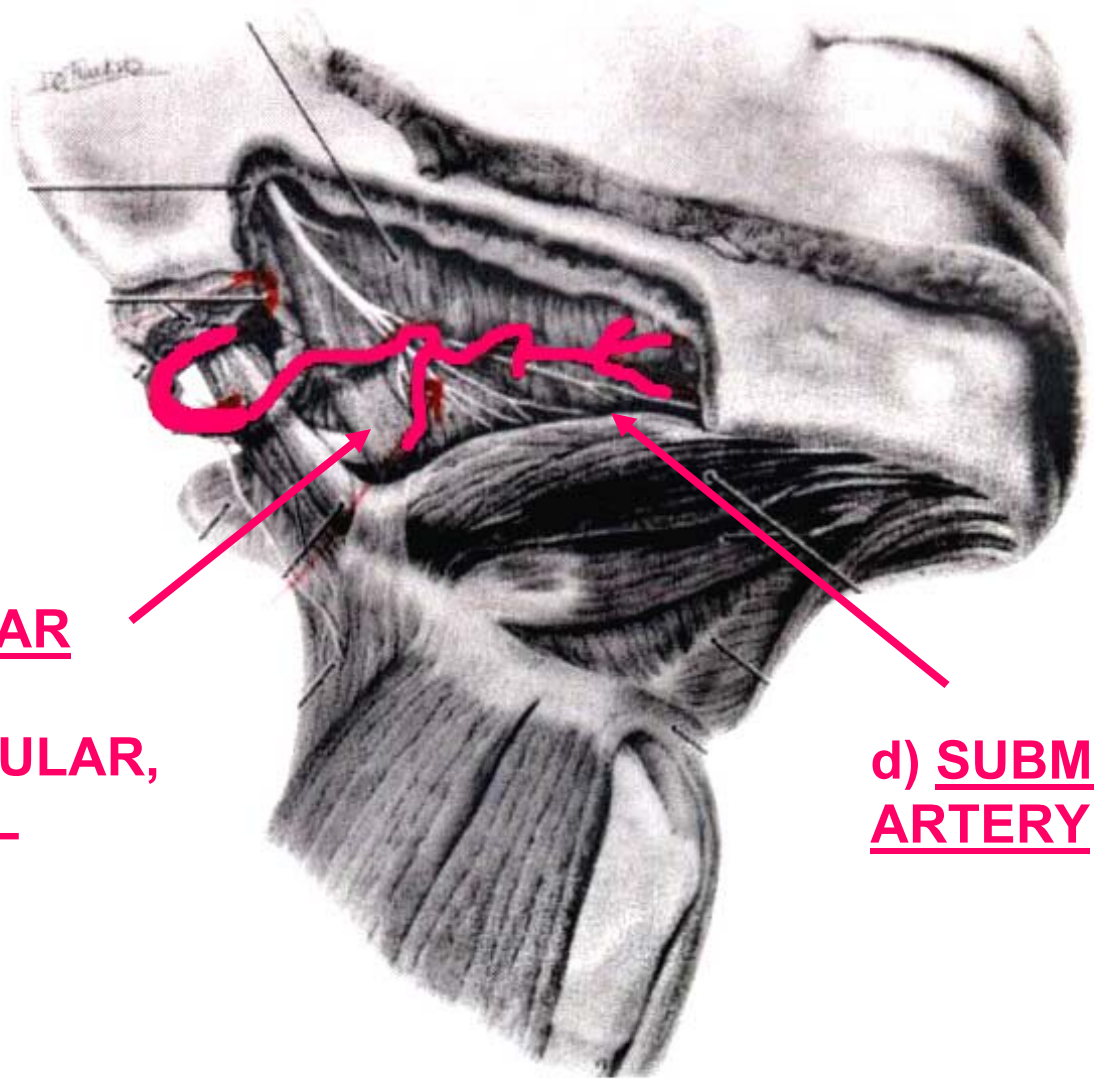


FACIAL ARTERY- BRANCHES MEDIAL TO MANDIBLE



FACIAL ARTERY- BRANCHES MEDIAL TO MANDIBLE

NOSE



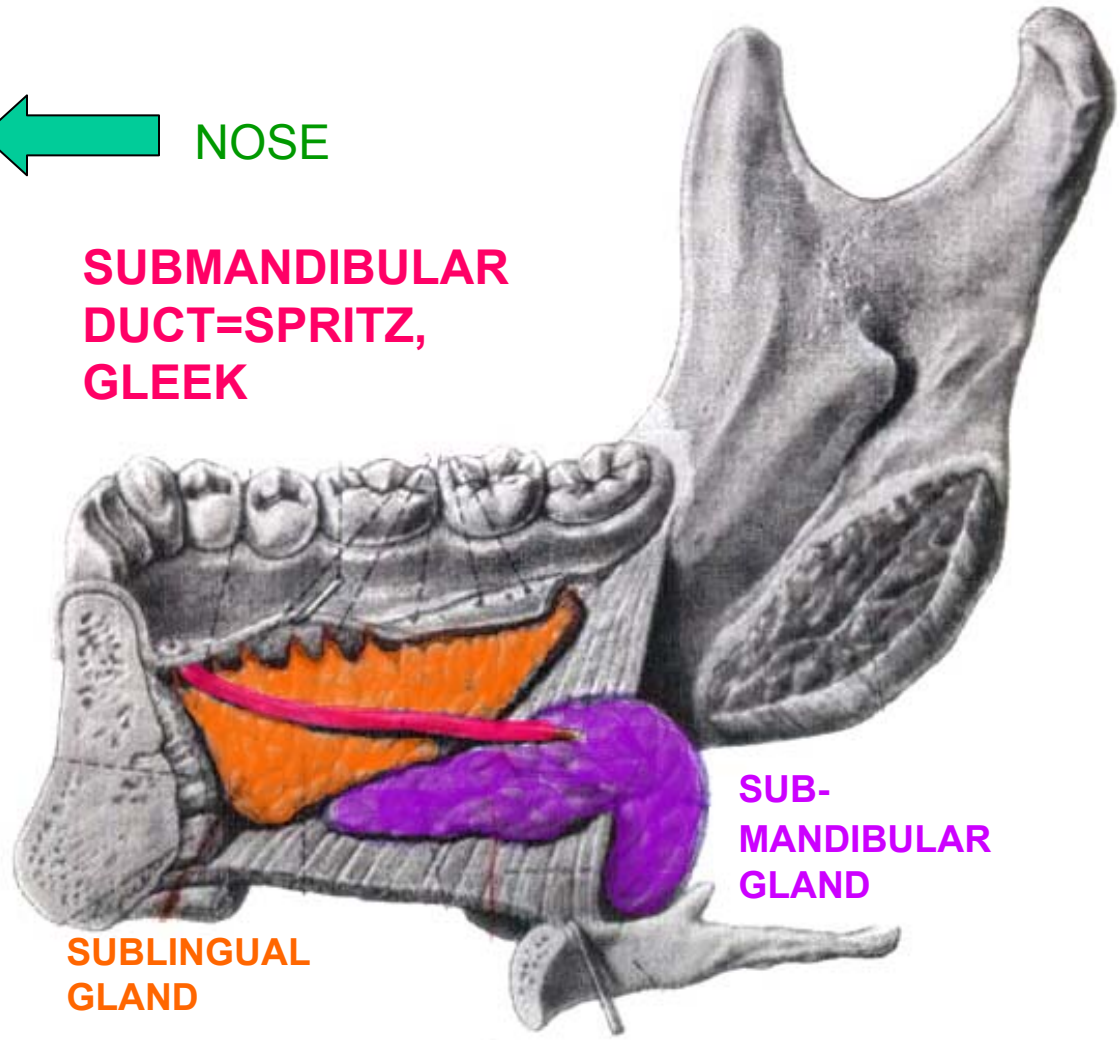
c) GLANDULAR ARTERIES - SUBMANDIBULAR, SUBLINGUAL GLANDS

d) SUBMENTAL ARTERY TO CHIN

C. SALIVARY GLANDS

NOSE

SUBMANDIBULAR DUCT=SPRITZ, GLEEK



1) <u>SUBMANDIBULAR GLAND</u> - C SHAPED, WRAPS AROUND POST BORDER OF MYLOHYOID; –CAPSULE ATTACHED TO MANDIBLE, DERIVED FROM INVESTING LAYER

<u>SUBMANDIBULAR DUCT</u>- ARISES BETWEEN MYLOHYOID (ANT) & HYOGLOSSUS- POST –OPENS- 1-3 ORIFICES ON SUBLINGUAL PAPILLA

2) <u>SUBLINGUAL GLANDS</u>- LOCATED BETWEEN MANDIBLE & GENIOGLOSSUS –OPENS- 10-12 SMALL DUCTS TO SUBLINGUAL FOLDS (PLICAE SUBLINGUALIS)